

ABOUT



# PHOTOGRAPHY

AND

# PHOTOGRAPHERS.

A SERIES OF ESSAYS FOR THE STUDIO AND STUDY.

TO WHICH ARE ADDED

CONTINENTAL RAMBLES WITH A CAMERA.

BY

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## PHOTOGRAPHY AND PHOTOGRAPHERS.

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### THE FIRST CAMERA PHOTOGRAPH.

ALTHOUGH some little time has now elapsed since the publication of the memoirs of Nicéphore Niépce in France, under the title of "La Vérité sur l'Invention de la Photographie," but very little notice has been taken of this important work in this country; for beyond the insertion of a few extracts in some of our journals, the interesting facts contained in the volume have been passed over altogether. Thus we have lecturers at the present day making grave blunders in regard to the early history of the art, which a mere glance at these memoirs would at once have obviated; while writers on the subject frequently confound or misquote dates in a most deplorable manner.

The work is from the pen of M. Victor Fouqué, a gentleman of considerable literary ability, and one eminently qualified to undertake the task he has performed; he is quite unconnected with the family of any of the original workers or experimenters, and he is, besides, a gentleman of high scientific qualifications. He bases his writing on upwards of a thousand private letters and documents still in existence, and has done his work evidently in a thoroughly complete manner. There may, of course, be false conclusions drawn from some of the evidence given; but in most cases the facts are stated in so straightforward a manner as to carry conviction with them.

From this book, then, we learn that Joseph Nicéphore Niépce was the third of four sons, and was born at Châlons-sur-Saône.

Destined for the church, he received a liberal education ; but, owing to the revolutionary and unsettled state of France at the time of his leaving college, he exchanged the cowl and staff for helmet and sabre. He served through the Sardinian campaign as *sous-lieutenant*, and was afterwards, on account of his special ability, placed upon the staff. At Nice, where he was quartered, he fell dangerously ill, and was nursed through his sickness by a widow lady and her daughter, the latter of whom he afterwards married. On becoming convalescent, his eyesight was so much impaired that he was unable to do duty again with his regiment, and by the influence of his military friends a small civil appointment at St. Loup was bestowed upon him. Here he settled down to live quietly, and was joined soon afterwards by his elder brother, Claude, who had likewise served his country in the navy, and who had also resolved to become a peaceful citizen. Both Nicéphore and his brother Claude had been, as boys together, frequently employed in the construction of mechanical models and contrivances, and their subsequent labours in this direction resulted in the elaboration of a machine called the Pyreolophore—an invention in which a new description of locomotive power capable of immediate development was to be employed, and which evidently bore a resemblance to the present velocipede. As nothing could be done with this invention in France, Claude Niépce resolved to try his fortune with it in England, where mechanical genius appeared to receive far greater encouragement at that time than in his own country. He accordingly came to this country, and it was during his absence that Nicéphore made his first experiments in photography, the details of which are fully explained in letters exchanged between the two brothers. He had heard of Senefelder's invention of lithography, and his idea was to reflect an image upon stone which should remain permanent after the shadow had passed away. He contrived a camera-obscura, and fitted it with a lens, and forthwith began to experiment ; his essays were exceedingly successful, as we find narrated in letters written to his brother Claude in England, letters which are given *verbatim* in M. Fouqué's book.

Here is the apparatus described:—"I have profited by the short time we remain here to construct a kind of artificial eye, which is simply a square box measuring six inches each way, and furnished with a telescope-tube containing a lens."



It was in the year 1816 that Nicéphore Niépce first produced a veritable photograph in the camera; but in this instance the lights and shadows were inverted—that is to say, the whites in the original object were depicted in black in the picture, and *vice versa*. This photograph was obtained, as far as can be made out, by steeping white paper in salts of silver, to render it capable of being blackened by daylight, and placing a sensitive sheet of this description at the back of the camera, where the reflected image could fall upon it. By these means he obtained landscape pictures, which, however, remained visible for a week only, even when screened from the light. In his letters to his brother, Nicéphore details the progress he makes very minutely; how he finds that sunlight is not absolutely necessary for the production of his pictures, but that diffused daylight will do; how, in order to obtain an image of sharper definition, he finds it necessary to contract the opening of the lens; and how he busied himself in endeavouring to transpose the lights and shadows. He forwards to his brother his first picture; and the letter which accompanies it reads more like a communication from an amateur photographer of the present time, rather than a document written more than half a century ago.

A few extracts from the letters show how surely and certainly Niépce progressed in the right path.

In a letter dated 5th of May, 1816, he describes his mode of working:—"I placed my apparatus at the open window of the room where I operate, in front of the pigeon-house, and made an experiment in the usual manner; I obtained on the white paper the whole of that portion of the pigeon-house which is seen from the window, and a faint image of the casement, which was less brilliantly lighted than the exterior objects. This is, of course, but a very imperfect experiment, and the image reflected was of the most minute dimensions. The possibility of obtaining a picture by this method appears to me probable, and I will hasten to let you know the results of my labours as soon as possible. I am well aware that there are still many difficulties in my path—above all, the problem of fixing the colours; but with steady perseverance and much patience I hope to succeed in working out my designs. That which you foretold has happened: the ground of the picture is black, and the images are white—that is, lighter than the ground.

"I believe a method of obtaining pictures by this means might



be made use of, and I have seen engravings of a similar description. It may not be impossible to change the disposition of the colours, and I have made some experiments in this direction which I am anxious to verify."

On the 9th of May, 1816, he says:—

"I omitted to tell you in my last letter that I have found out that, in operating, it is not necessary that the sun should shine, and that the movement of this luminary does not in any way affect the position of the image; at least, I have never observed any movement, which I could not fail to have done if such had taken place."

On the 19th of May, 1816, we have a description of the first photographs from nature that were ever taken in a camera, more than twenty years before Daguerreotype was made known:—

"I have to enclose two pictures taken by my process . . . . You will be able to judge of the effect better by placing yourself somewhat in the shade, and holding up the pictures, placed upon an opaque body, against the light. A picture of this description is, I believe, subject to alteration after a time, as, although proof against the action of light, the reaction of the nitric acid in its composition will have the effect of destroying it; it is possible also that the prints may become damaged by shaking and jolting during their transport. This is, of course, merely an experiment; but if the materials were rather more sensitive (as I hope to obtain them), and, above all, if the order of the shadows was inverted, the illusion would, I think, be quite complete. . . . The two pictures were made in my operating-room, and the field is merely the diameter of the casement. . . .

"My future investigations will be conducted with a threefold object:

"1. To obtain a clearer definition of the reflected image.

"2. To transpose the tints or shadows.

"3. To fix the tints—an operation which is by no means an easy one."

From this we learn that Niépce was on the right track; and how successful his next endeavours were, is shown in a letter dated 28th May. The description of the photographs he sent his brother is so minute in every detail that we can quite picture them in our mind:—

"I send you herewith four new prints, two large and two small ones, which I have obtained of sharper definition by the

adoption of a very simple process, which consists in contracting, by means of a disc of cardboard, the diameter of the lens. The interior of the camera being less illuminated, the image becomes sharper, and the outlines, as likewise the lights and shadows, are much more clearly defined. You will be able to judge by the roof of the pigeon-house, by the angles of the walls, and by the casement, in which the window-frames are distinctly visible (in certain places the glass even appears perfectly transparent); and, lastly, you will perceive that the image retains the exact tints or colours of the original object. If the picture lacks definition, it is simply on account of its minute size, and the original would be quite as ill-defined if viewed from a corresponding distance. . . . The pigeon-house is reversed on the pictures, the barn—or, rather, the roof of the barn—being to the left instead of to the right. The white mass which you perceive to the right of the pigeon-house, and which appears somewhat confused, is the reflection upon the paper of the pear tree, which is some distance further off; and the black spot near the summit is an opening between the branches of the trees. The shadow on the right indicates the roof of the bakehouse, which appears somewhat lower than it ought to be, because the cameras were placed about five feet above the floor. Finally, those little white lines marked above the roof of the barn are the reflection on the retina of the branches of some trees in the orchard. The effect would be much more striking if, as I told you, the lights and shadows could be inverted. I shall confine myself to remedying this defect previously to endeavouring to fix the colours.”

In another letter, dated 16th June, 1816, we find that Niepce is attempting to secure pictures in their relative colours by employing a material which will bleach, instead of blacken, in the camera, and, further, that he has been attempting to use his inverted pictures as transparencies to give him positives. In both attempts, however, he is unsuccessful. He says:—

“ During the last few days I have occupied myself very little in producing fresh pictures, but have turned my attention to the important question of endeavouring to fix the prints in a permanent manner, and to obtain the lights and shadows of the image in their natural order. As some of my experiments undertaken in this direction give promise of success, I will describe them to you. The method suggested by yourself to obtain this double *desideratum* is a very ingenious one, and had likewise



occurred in my mind as being an experiment which I had the means of undertaking; but as yet experience has only taught me the fact that a substance which is easily bleached by the action of light is not capable of yielding nearly such good results as a material possessed with the property of absorbing light.

"I have read that an alcoholic solution of muriate of iron (which is of a fine yellow colour) became white on exposure to the sun, returning to its original tint when placed in the dark. I impregnated, accordingly, a piece of paper with a solution of this description, and when dry exposed it in the sunlight—an operation which had the effect of completely bleaching the material. I discontinued, however, the use of this solution, because of its tendency to attract the moisture from the atmosphere, and also because I was fortunate enough to discover a more simple and better substitute.

"I was quite of your opinion, my dear brother, that if a well-marked print were placed upon paper tinted with a bleachable colour, or covered with the substance which I employ, and exposed in this manner to the action of light, the image would be depicted on the sensitive paper in its natural tints, because the black parts of the print, being somewhat opaque, would intercept (more or less) the passage of the luminous rays: no such results could, however, be obtained—either, I presume, because the action of the light was not sufficiently strong, or because the paper I employed was too thick, and offered an insurmountable obstacle to the passage of the light. Such are the unsuccessful results which I have obtained; fortunately, they prove nothing against the soundness of the theory, but rather lead one to believe that a further investigation may be made in this direction with some hope of success.

"I have succeeded in decolourizing the black oxide of manganese; so that a paper treated with this oxide becomes perfectly white when placed in contact with chlorine gas. If, before becoming bleached, it is exposed to the action of light, it soon becomes perfectly white; and if, when white, it is slightly bleached with the same oxide, it may be bleached solely by the action of light. I believe this substance to be worthy of further trial; and I intend, therefore, to make some careful observations in regard to it.

"I was anxious to ascertain whether different gases were capable of fixing the tinted image, or of modifying the



action of light, if introduced into the apparatus during the operation of obtaining a picture. I have experimented only with chlorine, hydrogen, and carbonic acid gas; the first bleaches the image, the second appears to exert no effect whatever upon it, and the third destroys in a great measure the property possessed by the sensitive material of absorbing the light. An exposure of eight hours with carbonic acid gas failed to produce any impression whatever, except in the very high lights. I shall renew these interesting experiments, and propose using several other gases, more especially oxygen, which, owing to its affinity for metallic oxides and light, merits particular attention.

“I shall at once occupy myself with the preparation of a stone to replace the sensitive paper, and to receive the impression of the image. I shall first soak it for a short time in warm water, and then put it in contact with chlorine gas, which, by a suitable contrivance, may be introduced into the interior of my apparatus; by this means I hope to obtain a decisive result, if, as doubtless will be the case, the chlorine is decomposed by the light, and its solvent action thus modified.”

It was in 1823 that Niépce succeeded in discovering a method of producing permanent photographs, and likewise in devising a photo-engraving process, although mention of bitumen of Judea is made in 1820. Many specimens of his photographs and photo-engravings are still extant. He found that a bituminous mineral, known as bitumen of Judea, which is soluble in certain oils in its normal condition, became insoluble after exposure to the action of light. By coating a metal plate with a solution of this material, and exposing the same in the camera, an image was obtained which was rendered visible by afterwards washing the surface over with animal oil of Dippel, the latter substance being capable of dissolving away such portions of the bitumen that had not been fixed by light: the insoluble portion of the bitumen remaining on the plate formed the picture.

It was not until after Niépce had succeeded so far that we are told anything of Daguerre; and now we begin to hear of him for the first time. A relative of Niépce shows, in 1825, one of the bitumen pictures to Chevalier, of Paris, and the latter at once says that some experiments with the camera have been made by Daguerre, but with no apparent success.

On his way to England to visit his brother, who was dangerously ill, Niépce passed through Paris, and saw Daguerre for the

first time in 1827. Previously to this, Daguerre had written repeatedly to Niépce for a specimen of his work, and at last Niépce sent him a plate with the varnish scraped off. Niépce took with him to England some of his pictures, and desired to submit the process to the Royal Society through Mr. Francis Bauer, the secretary; but as the method was kept a secret, the Society refused to listen to the inventor. Niépce then sent his process to the king, through Mr. Aiton, but with no greater success. He lived near Kew, and during his sojourn in this country secured a picture of Kew Church, which is still in the British Museum. He returned to France in January, 1828, and his attention was then called to an improved camera, devised by Daguerre; and it was this incident that suggested the formation of a partnership between the two in 1829.

Daguerre was a painter of some eminence, and Director of the Diorama in Paris. For some time it was known he had been endeavouring to fix the image reflected in the camera; and, although he asserted that he had been successful in his attempt, no evidence of his being able to do so was ever shown. Niépce and Daguerre were brought into communication by Chevalier, and corresponded with each other for some time; and subsequently the two entered into a partnership to work out the invention together. The deed of partnership is still extant; and M. Fouqué gives a facsimile of it at the end of his interesting volume. The document states that a partnership has been entered into, under the title of Niépce-Daguerre, in order to elaborate a process *invented* by Niépce and *improved* by Daguerre—the former, as his contribution to the concern, agreeing to make known all details of his invention, and the latter contributing a new form of camera and the benefit of his study and labours. The contract was to last for ten years, it being expressly stipulated that in case of the invention ever being published, it should be made known under the title of Niépce-Daguerre; and should either partner die before the expiration of the period agreed upon, the natural successor of the partner so dying should fill the vacancy. The contract contains a most interesting account of Niépce's experiments, and of the results he has obtained hitherto. Although it gives, however, full details of Niépce's work, there is not one word of Daguerre's results; and we must infer, therefore, that till that date nothing of a practical nature had been secured by the junior partner.

Two years after the drawing up of this compact, Nicéphore Niépce dies, and his place is filled by his son Isodore. In the meantime Daguerre works away at the invention, and in 1839 sends for Isodore, and informs him he has at last found out a practical and efficient method. This process, he informs Isodore, is quite distinct, and unconnected in every way with that discovered by his father; and Daguerre therefore refuses to publish the same except under his own name. Isodore protests for some time, but, like Esau, ultimately sells his birthright for a consideration. Daguerre thereupon makes known the process to the Academy of France, omitting all mention of Niépce, and claiming for himself the whole credit of the invention; and it is not until some time afterwards, when Daguerreotype has become an established fact, that the friends of Niépce come forward and commence an investigation of the subject.

It was, indeed, the Secretary of the Royal Society, Mr. Bauer, who, on the publication of Daguerreotype, called attention to the fact that Niépce had invented a similar process, and had shown in this country pictures obtained by its means more than ten years previously. Daguerre asserted his invention to be totally distinct from that of Niépce, and not based upon it in any way; while, on the other hand, the Niépce party contended that Daguerreotype was a mere modification of what ought to have been called Niepcotype. In the end, the French Government awarded 4,000 francs as annual pension to the son of Niepce, and 6,000 francs to Daguerre.

Daguerreotype, as described by its inventor, is divided into four operations:—1, to clean the metal plate; 2, to render it sensitive; 3, to expose it in the camera; 4, to develop the image. Niépce's description of his process, as detailed by him in the book before us, is as follows:—"I first take a metal plate, either of tin, copper, or silver (but I prefer the first), and this I coat with a film of bitumen of Judea, which is sensitive to light. I then expose the plate in the camera, and afterwards wash it in oil of almonds to render the picture visible. I also use iodine to render the image more black." Now, how far Daguerre is indebted to Niépce for Daguerreotype is an open question; but certain it is that Niépce elaborated a good photographic process, and gave information the importance of which cannot be too highly estimated.

Daguerreotype is decidedly superior to the Niépce process;



but some of the manipulations are certainly based thereon, for the *modus operandi* in either case is identical. Niépce mentions the use of a silver plate and of iodine, and actually hints at the employment of mercury; and, besides this, makes known the broad fact that a visible image is not at once obtained in the camera, but that it requires to be developed in a subsequent operation.

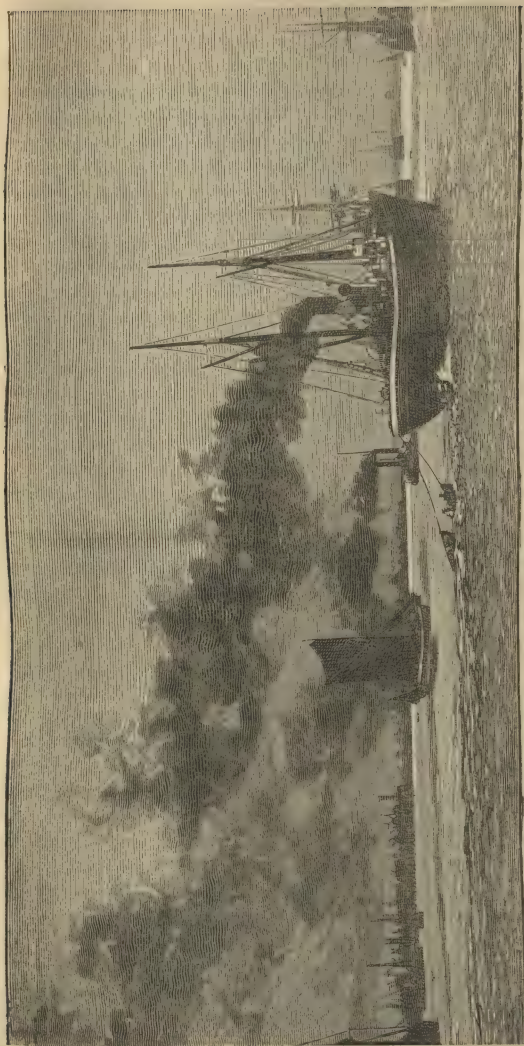
The conclusions to be drawn from this work, therefore, seem to be that to Niépce, rather than to any other, belongs the honour of having discovered photography with the camera; and that Daguerre improved the art to a very great extent, and produced a beautiful practical process from the embryo invention of Niépce. It will remain an open question, however, whether, if Niépce had made known and published his results to the world, there would have been, not one, but perhaps twenty Daguerres, quite as capable of improving and working out the process as the inventor of Daguerreotype. All honour and fame to Daguerre for making one mighty stride of progress in the beautiful art of photography; but we should have admired him more if, when publishing his invention to the world, instead of ignoring Niépce's early aid, he had generously made some mention of the labours of his dead partner.

### RAPID EXPOSURES AND FINE ART IN PHOTOGRAPHY.\*

THE advent of gelatine plates and rapid exposures will help the "special artist" very materially in his work. Indeed, the time will soon come, we make no doubt, when the artist, be he painter or draughtsman, who undertakes the duties of a "special" in connection with an illustrated journal or magazine, will, as a matter of course, carry with him a small photographic outfit, to help him in gathering in sketches for transmission home. The *New York Daily Graphic* has upon its staff a photographic editor, while it may be said that the *Illustrated London News* and *Graphic* never issue a number now-a-days in which the art of photography has not assisted.

Our illustrations will explain, in a measure, how helpful the camera may be to the artist. Take Mr. Mayland's "Shipping and Smoke" as an example. An artist sent from abroad to

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THE BUSY THAMES (WILLIAM MAYLAND).

obtain sketches of the busy Thames, with a view to producing a work on London, or a painter desirous of depicting upon canvas the crowded highway so indicative of our commercial prosperity, would value a photographic sketch of this nature very highly. Half a dozen such pictures, supplemented by a few rough drawings in his note-book, would amply suffice for his purpose. The massive screw-steamer gliding swiftly down the river, the dark-sailed barges, the black smoke from funnel and factory, indicate an amount of "life" which, if he had been able to grasp it at the moment, could not have been set down in black and white without much labour. But, in all probability, it would have been impossible to seize the effect with a pencil; the heaving water as the huge screw swings quickly round, the dense curl of black smoke blotting out portions of the sky, the barge tacking to avoid the steamer, the belching chimneys in the background—not one, but all of these effects go to make up the picture.

Another example of rapid work by which the artist may benefit is the "Swans" of Messrs. Marsh Brothers. It would need a quick eye to seize either the vivid movement of the fast-turning birds, or the iridescent effect upon the water, which has almost the viscid appearance of molten metal. Mr. Mayland's flock of sheep, full of life and animation, cropping the grass among gorse and heather as they advance, is another study that animal painters would make good use of; while "Henley Regatta" and the "Cricket Match" are of a class which special correspondents and artists for the weekly illustrated newspapers will best appreciate.

The rapid gelatine plates permit much that was impossible before, and for this reason it is that painter and draughtsman will be able to derive greater assistance from the camera. Street scenes are not only capable of depiction, but, by the aid of a clever apparatus recently constructed by Mr. Bolas, and which has received the name of "Detective Camera," they can be secured without the presence of the photographer being dreamt of. The camera, which was recently described in the photographic journals, is to all outward appearance a small portmanteau, a hand-bag, or even a boot-black's block, as the case may be, and this is set down for an instant on the pavement, the parapet of a bridge, or any eligible site. The photographer rapidly takes account of his lighting, his distance, and foreground,





STUDY OF SWANS (MARSH BROTHERS).

makes his exposure, and is away with the instrument before even his sojourn has been remarked. The results we have seen are quite Hogarthian in their character. An apple-stall at the foot of London Bridge, with a boy bargaining with the woman for her wares; two men seated on the paddle-box of a penny-steamer, the one relating an incident, and the other rubbing his forehead in doubt—such things are but sketches, it is true, but they would be invaluable to any painter of the life and manners of our metropolis. The rapidity of gelatine plates, therefore, permits of taking something more than set scenes and arranged tableaux, with which photographers formerly treated us; photographs full of life and being are now attainable, and this quality must ever be valuable to the artist.

To come to the second point of our paper. Now and again, as everybody knows, a most excellent result is achieved by the ordinary photographer; but if he is to produce you a photograph every time he sets up his camera, he must understand something more than the technicalities of his calling. We will go to Mr. Mayland's picture of the Thames once more. A similar scene may be frequently witnessed on our river, yet such pictures as his are scarce. To secure the result, the photographer had not only to wait until a disposition of the shipping proper to the exigencies of art was before him, but he had also to judge of the lighting, so that the massive shadows of vessel and smoke came between him and the sun, to produce due contrast, while at the same time the technical excellence of his photographic plate should not be marred. Nay, more; it was necessary for him not only to have some art knowledge in order to choose and seize a picture, but to possess sufficient skill and wisdom to produce his shadows, high-lights, and half-tones in harmony with the subject. In a word, he must so understand the *development* of the plate that he can give due effect to lights, shadows, and distance.

This endeavour to get something of fine art into camera pictures is successfully achieved in many of the photographs of to-day. At the last Paris Exhibition, indeed, one of our English photographers, Mr. H. P. Robinson, of Tunbridge Wells, was granted the gold medal for the art qualities of the fine photographs he exhibited. It is perhaps only fair to say that Mr. Robinson, as an exhibitor at the Royal Academy, has claims to be considered a painter as well; but still it is on the

ground of art-photography that he has gained distinction, and we will here try to show how it is that an artist who is also a practised photographer secures very different results to one who understands but the technicalities of the matter.

Given a landscape, and given a photographer who is so far a photographer only that he can perform all the technical operations satisfactorily. There is a patch of black firs in the foreground, there is a grey castle high upon the eminence, there is a slope of brown woods in the distance. It has been argued many a time that the camera is but a mechanical instrument that cannot go wrong, but must perforce reproduce any scene that happens to be in front of it. Very good. The exposure is made, the plate is developed, and we look at the result. The negative is clear and bright, and lacks nothing as a chemical result; but the brambles in the foreground look like dried faggots, the castle on the hill is only half the height it is in nature, the pines are represented by pitchy darkness on one edge of the picture, and the woods in the distance are lost in the bright sky-line. The technical photographer has a reason for all this; he will say that the brambles were so close that they were out of focus; the lowness of the hill is simply due to the lens, for all objectives have a tendency to depress the horizon; the pines are black in nature; and if the plate had been sufficiently exposed to photograph them properly, the sky-line would have fogged. In all these explanations he is right; but, for all that, a photographer with some pretensions to art-knowledge would have made a very different thing of it. Mr. Robinson, Mr. Mayland, Mr. England, Mr. Bedford, Mr. Payne Jennings, Mr. Harvey Barton—to take half-a-dozen names at random of our best landscape photographers—would have made a picture. The brambles, boldly limned in the foreground, would have contrasted with the soft brown woodland on the horizon; the castle walls of silver-grey would rise sharply against the sky-line; while the pines, with their clear dark shadows in middle distance, would complete the picture. If he were an artist as well as a photographer, he would first know what is required to make a picture, and then be able to make it. As a painter has to begin by choosing his pigments and mixing them, so in a measure he must bend his apparatus to his requirements. At the outset of his work he knows that if one lens will not fulfil his requirements, another will; he is aware that if he raises it a



little out of the centre, he will correct that tendency to depression we were speaking about; but what lens he uses, and how he manipulates it, is all a matter of judgment. Next, to light the scene with effect, so as to secure massive yet transparent shadows, to decide which shall be the high-lights of his picture, to produce an effective rendering of this object, while another shall not unduly suffer, are all points to be considered. We need not dwell upon choice of foreground, or upon the composition of the picture, for it is only too evident that the photographer must study these, if he is to produce anything of an artistic nature; but in the *development* of the plate, the knowing exactly what he wants and what he is working for, there is again considerable scope for taste and judgment. He will strive to produce a negative which, while vigorous in part, shall yet show the gentle haze in the distance, and furnish a print so soft and harmonious in colour, that it looks like a sepia or charcoal drawing. He must, we repeat, know what is wanted in a picture, and be able to produce it.

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### THE STATUS OF THE PHOTOGRAPHER.

"A PHOTOGRAPHER has no status at all," we were once told by a gentleman, himself one of the fraternity. "Take any other profession you like," was his argument, "and you cannot name one to whom it is not an honour to belong. With photography, on the contrary, there are those on the outskirts, and ever will be, enough to drag any profession into disgrace."

This dictum, though pronounced with a good deal of prejudice and bias, deserves consideration, since it is the view, unfortunately, not of a single individual, but of a great many. Still, photographers should always remember this—that they have quite foes enough to contend against as it is, without they themselves becoming enemies to their own cause into the bargain.

It is absurd to compare photographers with the members of ordinary professions; although, if we do so, we shall at once find out a fallacy in the above argument. As an instance, let us take the legal and medical professions; law and physic, two of the oldest callings we have, are not free from the taint of unprincipled followers. There are pettifoggers and vampires in the law, and ever will be, just as there are quacks and impostors

in medicine. But lawyers and doctors do not for that reason deery their race, nor lament over their profession; the presence of black sheep in a well-ordered fold is but a matter of course, and acts, indeed, as a foil to show up the purity of whiter fleeces. But in any case, it is not the insignificant and unscrupulous of any class that give it rank; the position of a community is precisely what its chief followers make it.

Leaving aside, for a moment, the question of business—and a photographer must be a man of business, like the author, the painter, the actor, nay, even the poet, if he desire both wealth and fame—we shall find that a photographer's rank is governed exactly in the same way as that of every other artist; or if exception be taken to this last word, we will say in the same way as that of a writer, an actor, or a painter, whether these are artists or not. Among painters, we have the President of the Royal Academy, and the dauber of signboards; among actors, there is the leading tragedian, and the poor super who staggers about with a banner for a shilling a night; among litterateurs are to be found "liners," and historians like Macaulay and Carlyle. Photography is but an infant calling compared with these, but we can nevertheless point to individuals who represent the Alpha and Omega of the art. As in painting, acting, and writing, so in photography, each man is for himself, and must win his own position. And this is one reason the more to be cited in favour of the claim of the cultured photographer to be considered an artist. In cricketing parlance, he makes "off his own bat" what credit redounds to him.

Thus, the status of a photographer is the position he makes for himself. Good work done will raise the photographic art, though it will not raise photographers who are incapable of good work. As we have said, photography—or, rather, art-photography—is still in its infancy only; but year by year, as clever recruits flock to the standard, and begin to understand and apply to the capabilities of photography, we shall steadily and surely progress. There can be no doubt about this. Both in landscape and portraiture we have lately seen examples which were rare enough in days gone by. Indeed, had it not been for the fact that men educated as painters and draughtsmen joined the ranks of photographers in the early days, the art production of years ago would never have been seen. Rather than marvel at the disposition to dispute that there is anything of art at all in photography, we

should feel surprised that so much good work has already been done in the brief period since the camera came into our hands, and the multitudinous technical difficulties have been overcome.

Every photographer, then, must work for himself, and gain a position for himself, and, as the number of artistic photographers grows apace, so estimation of photographic art will rise likewise. But, however highly photographic work may be esteemed by the public, it will always be—as in painting—the individual, and not the class, to whom honour will be given. It was not so many years ago that “painter fellows” were looked down upon, and even in the days of Thackeray, as readers of the *Newcomes* know very well, the wielding of the mahlstick was held to be a little low. Let photographers, then, take courage, for their existence is but as yesterday, compared to the worker with palette and pigments.

And now to touch upon the burning question as to whether photographers include artists in their ranks, for this matter is inseparably connected with the status of the photographer. Of course, those who fulfil merely technical duties can have no claim whatever to the title. The question is whether photographs have ever been produced entitled to be named works of fine art. Painters were very confident upon this point some years ago; they are less confident now. Granted, for a moment, no picture secured in the camera is entitled to the name. Why is it, we ask, do acknowledged artists of high standing, year after year, admire and covet the possession of this or that picture? When the president of the Society of Water Colours highly praises the pose, lighting, and delicate tones in a child's portrait; when a distinguished Royal Academician fervently longs not for one, but for a dozen examples out of a single collection; when a famous sketching club sets up the pictures of a distinguished landscape photographer as studies to be imitated; and when we have in the Royal Academy itself transcripts in colour of photographs pure and simple, we think we may fairly leave this burning question to answer for itself. There may not be any art qualities present in such photographs, only one would like to know very much what it is then that artists admire.

But the camera cannot create; it can only reflect. Be it so. There died recently, England's greatest living novelist, “George Eliot.” She wrote of many delightful characters, and described many pleasant scenes; but we find, now that she is dead, that



her characters, for the most part, were not imaginary, but real; that her picturesque villages were not the conception of her brain, but green nooks and corners well-known in leafy England. They are, in short, reflections, and not creations; but George Eliot is no less an artist. Charles Dickens' characters, in like manner, were modelled from life; indeed, it has been truly said that imagination is nothing more than a lively memory.

One word, finally, on the matter of business. Because a photographer is an artist, he need not be unbusinesslike; nay, let him look ever so sharply after the question of pounds, shillings, and pence, and we can assure him he is by no means the keen man of business to be found among those whose claim to be considered artists no one disputes. The poet bargains for so much a line, ere he puts his pen to paper; the novelist will not part with his manuscript without tying the publisher down to a most minute agreement; the painter insists on guineas instead of pounds for his picture. Even men of science, on whom it has been the fashion to look as philanthropists, remind us of the proverb that a labourer is worthy of his hire, the philosopher being quite as ready to insist on good payment for his services, as any merchant or tradesman can well be.

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### ABOUT MEDALS.

WE are not going to discuss whether the giving of medals at all is a wise proceeding, nor do we propose to enter into the subject of the best method of awarding medals. We simply mean to have a chat about them as they exist, and perhaps air a few of the minor points that have attracted attention in connection with recent awards.

From the nature of things, where there are few prizes and many blanks, the number of disapprovals must always be very large; if a jury awarded five medals among one hundred competitors, and then asked the hundred to confirm by show of hands this award, there would possibly be ninety noes against it. The dissatisfied—none of them expected a medal, they would have you know; what they object to is the circumstance that the awards made have all fallen to the wrong people—just those, of all others, whose work is open to serious criticism. In the case

of the Paris Salon, which answers to our Royal Academy, the dissatisfaction has reached such a high pitch in respect to awards, that Government has refused to have aught to do with the nomination of a direction; the people are to do it for themselves. And what has been the result? That a jury, or body of direction, has been chosen upon a political basis, artists of Bonapartist proclivities being excluded, and Republicans freely admitted; art has had nothing to do with the selection; it has been a step out of the frying-pan into the fire.

So long as people strive after perfection, whether it is an ideal jury they are looking for, or an ideal government, so long is discontent likely to last. "Man is not perfect," says the philosopher; "nor," he adds, "women either;" but, perhaps, of all imperfect bodies in this world, a jury has most shortcomings. A man of average intellect can walk about among his fellow-beings tolerably respected; but let him once be empannelled as a jurymen to decide this point or that, and he becomes the object of general execration. In a Court of Law he is fined, bullied, and cruelly penned-in with his fellow-creatures, without regard to health or comfort; the judge is impatient with him, the counsel abuse him, and the public, after his verdict has been given, comment freely upon his stupidity and wooden-headedness. Juries that have other than legal questions to decide may be treated with a little more consideration, but that they always get heartily abused for their pains is only a matter of course.

We should be the last to affirm that on many occasions the strictures are only too well deserved. Juries are human, and it is human to err. The question to be considered, however, is, rather, whether, so long as verdicts are to be given in this way, either in photography or anything else, we can expect a better system to prevail. But, say some, we do not so much cavil at the verdict as the choice of men who deliver that verdict. They are the wrong persons altogether for art-critics, and hence their decision is a bad one.

Without going into the constitution of the juries at the London Exhibition, Cornwall, Bristol, or elsewhere, we will glance for a moment at the critics chosen by the great London organs—the daily press—the critics chosen by the most influential journals of the most influential city in the world. In London, we not only find the best talent, but we find, too, the best market for that talent, and hence we may well accept the choice made by

our wealthy daily papers to be worthy of consideration. If, then, we look round at these art critics, we shall find that they do not include among their number a single painter or professional draughtsman; so that our editors and the public generally do not believe that a painter or sculptor is the best judge of paintings and sculpture. The *Times* for many years was represented by the late Mr. Tom Taylor, a practised playwright, a sound writer, and, for some years previous to his death, editor of *Punch*. Mr. Tom Taylor wrote the criticisms upon the Photographic Exhibition which appeared in the *Times* between the years 1868 and 1878. The *Daily Telegraph's* staff of art critics consists of Mr. George Augustus Sala and Mr. Godfrey Turner, both able leader writers and accomplished journalists, but neither known to fame as painters of pictures. One or other of these gentlemen has usually written the notices of our Exhibitions. On the *Daily News*, the best known art critic of recent years is Mr. William Black, the Scotch novelist, and author of "Princess of Thule," and many other charming stories. Mr. Black did not, during his engagement, hesitate to write the review of the Pall Mall Exhibition, but he is neither painter nor photographer, although his hand is cunning enough with the pencil. The *Standard* was represented for many years by the late Mr. Merritt. The *Morning Post*, in its art department, is frequently represented by Mr. Ashby Sterry, author of the "Boudoir Ballads," and other graceful poems; while on the *Morning Advertiser* the criticisms of paintings and photographs devolved for some years on Mr. Horace Greene, a barrister and writer of note. Curiously enough, therefore, we find London art critics to consist of purely literary men, artists, probably, every one of them in their particular sphere, but none of them professional painters or sculptors.

Would it be satisfactory, we ask, to those who grumble at the present plan of constituting juries for awarding medals at photographic exhibitions, to choose only literary men for the post? We fear not; any more than it has proved satisfactory to place among the jury, painters of acknowledged reputation. We say again, a jury, whatever its constitution, must necessarily be imperfect, and if you will have medals, you must not grumble if their distribution is not made according to the most sublime justice.

Another point that has recently been raised is that the jurors, whoever they are, should make a report justifying their awards.



We need scarcely allude to the old saw that says, "Give your judgment, but never your reasons; your judgment will probably be right, your reasons wrong;" but even if your reasons are right, it does not follow that you are able to express them. You may be a wise judge, but a bad logician. Again, though it is easy to criticise a picture adversely, the reverse is a hard task indeed; thus, in finding fault, you may agree to the presence of genius, of skill, and of knowledge of the subject; but the whole thing, you argue, is out of drawing, the sentiment has been misunderstood, and the composition lacks completeness as a whole. Thus it is easy to censure any artist, and the more faults you find, the higher will stand your reputation as an art critic. But the jury or the judge are asked to execute a much more difficult task in defending a picture; you ask them to vaunt its praiseworthy effects, to show how vastly superior it is in this and that respect to other fine pictures near it. You do not ask one of the jury to do this, but all of them, and want them to agree unanimously on the high merits that are pointed out. A collective report such as this would be simply impossible, or, if it were drawn up, it would represent but the single views of the writer, and could not fail to be received with entire dissatisfaction.

Under these circumstances, it may be asked, do medals mean anything beyond indicating its recipient to be a lucky fellow? Is he anything beyond the object of good fortune? We think not. No doubt luck has a good deal to do with the matter, but we may well believe that if it gains a prize, a picture, besides being a good picture, must have points about it entitling its producer to high commendation. And if we find, time after time, that this or that gentleman is fortunate enough to get medal after medal, then we may certainly put it down that something far more praiseworthy than good luck is at hand. But it is obvious to all, exhibition after exhibition, that pictures go unrewarded which are in every respect as good as those that have earned medals. When there are many deserving pictures and few medals, the distribution of these must necessarily be unsatisfactory. If the jury could say, we find twenty first-class exhibits, and therefore we would suggest the award of twenty medals, one difficulty might be obviated, but it would give rise to several others quite as hard to overcome.

Rather, we would say, regard the award of medals as a piece of machinery, necessarily defective, which all must put up with.

as long as these emblems are made an important part of our exhibitions. They give rise to discussion and argument, and that is decidedly something, if these are free from bitterness and ill-feeling; but whatever may be the advantages of medals, there are, nevertheless, some excellent reasons why they might be dispensed with in photography, as they are in the case of our international exhibitions of paintings and sculpture.

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### A FADED CARTE.

WE are told there is a lull in the work of professional photographers. Sittings are more rare than they used to be, and orders come in at longer intervals. The family album and the albums of notables have lost their interest, and everybody is tired of looking at the portrait of his grandmother on the first page, and at that of the late Grand Duke of Somewhere, on the last. Most of the pictures are soiled, some are faded, and all have an old-fashioned, by-gone appearance that is the reverse of inspiring; a sameness pervades the whole volume, for one photographic portrait closely resembles another in tone and treatment.

There is much in the plaint that is true; in fact, it is just the elements of truth therein that cause many to believe in the lugubrious state of affairs. To listen to some people, one might imagine that photography is a mere fashion, which came in some years ago, and is now getting into discredit and disuse. Photography is growing vulgar, they would have you believe, and photographers have seen their best days. Every year carte portraits are quoted at a shilling a dozen cheaper, while huge landscapes are now to be had for sixpence each. Is any other proof needed of the decline of photography?

Another reason for the dullness—real or imaginary—that exists in the photographic world, has been given, which is the more serious, since there are grounds for believing that of late years it may have influenced the affairs of portraitists. The reason was given us by a photographer of eminence, residing at one of our great manufacturing centres; it is, that there are not so many people to photograph now-a-days as was the case twenty years ago, and hence, as a matter of course, there is less work

for photographers to do. When photography first got within reach of the masses, there were three distinct generations to be photographed: the coming, the passing, and the present. It is not so now. There is only the rising generation to be depicted, and hence only a third of the work to be done. Such a statement is true, in a measure, no doubt; but there are many points upon which it is fallacious. For instance, the photographer of twenty years ago received but few orders for reproductions from old negatives, since he was in possession of but very few; while to-day a business must be worth very little which does not derive a snug little income from commissions given by relatives—or even by the sitter—who prefers to have himself handed down to posterity in the form of an enlargement or enamel, as he was ten or a dozen years ago, before his whiskers lost their ambrosial curl, and the brown locks had not entirely forsaken the crown of his head.

But the question we wish to discuss more particularly is, whether there is any reason at all for supposing that photography will lose the position it has occupied for years past; whether the eyes of the world are likely to look upon the art with less favour than heretofore; whether, because the art was then new and fascinating, it was unduly elevated, and must now sink down to a lower level. There is little doubt people do not make such a fuss about having their portraits taken as formerly, and that the lowest in the land now patronise the photographer as a matter of course. But with all these signs of photography becoming more and more vulgarized, the Upper Ten Thousand do not cease to present themselves before the camera. On the contrary, many of those who have shown themselves inimical to photography have been won over, unable any longer to deny the power and virtues of the subtle art. So that, rather than fall from its present position, photography will, in all probability, rise in the estimation of men. Its ultimate position, so far as the highest attainments of photography are concerned, will, we sincerely believe, rank in time only below the work of our gifted painters; while the essence of truth and reality that exists in a photograph will cause it frequently to be preferred even to the most æsthetic production. Painters in this country, who formerly inveighed against the camera, are now amongst the most generous patrons of the photographer.

We are acquainted with a gentleman who possesses a series of



family portraits. His father, grandfather, and great-grandfather had been painted before him, so there was nothing unusual about getting himself painted into the bargain. A commission was given to an artist of some eminence, and in due course the portrait was finished and exhibited in the Royal Academy, a pretty good proof that the work was tolerably well executed. A place of honour was subsequently found for it in the dining room, and there it hung to the admiration of all beholders. But the fame of the painting, unlike that of the other family portraits, was very short-lived—not because it was inferior to them, but for another reason. A photograph had been taken of the same gentleman, and enlarged in carbon, and, after a few touches with chalk, sent home. The two pictures, painting and photograph, were then placed side by side, and the family bidden to take their choice. Not a voice was uplifted on behalf of the painting; friends now wondered that they could ever have accepted it as a likeness at all. The painting was taken down, and the photograph hoisted into its place; and the last time we saw the painted portrait which had once adorned the walls of the Academy, and had cost one hundred-fold the price of the photograph, it was simpering over a lot of disused furniture in a lumber-room.

The photographer, then, may take heart again, if he has lost it. If it is a question of public interest, and of pomp and circumstance, the portrait painter will be called in to do his best; but where simply a true likeness is desired, the photographer will be as indispensable as ever. The painter and the sculptor are among the first to invoke the aid of the camera to furnish them with images of those nearest and dearest to them. Let the votaries of art be ever so hostile to the new-comer, they cannot afford to be without the privileges and advantages the camera confers. They may paint pictures of their children, but they will not the less secure photographs, which will be treasured far more highly; for the painting, let it be executed with all the genius and skill imaginable, must always remain something impersonal. Granted it is a faithful portrait, it is nothing more. The humblest carte-de-visite has attributes that the grand picture in oil lacks altogether. A photograph is a personal *souvenir* of the loved one, as well as a portrait. It is his actual shadow that is here, a shadow that remains to us now the substance has passed away. There is the smile, not the painting of

a smile; the parted lips, the bright eyes, the dimpled cheek, the curling hair, are not imitated, but are actual shadows thrown by the true lips, eyes, cheek, and hair, when once upon a time these were presented before the camera.

Nay, we have more than the actual features represented in the photograph. As Miss Thackerary truly says, there is an essence of personality present that can be produced in no other way. "You see him—himself; the identity is there, the dull worn look, or the familiar cross-grained expression, or the humorous twinkle of the eye, or the little vanities or negligences of dress which always belong to him."

It is, then, because photography can perform prodigies, and beget results far and away above those of other arts, that its aid has become indispensable. We have touched here simply on portraiture, but we might have spoken with almost equal force about the photographing of still life. Photography will not be able to sweep from this world sculpture and painting, and it is equally true that these arts can never affect the progress of photography. Each art fills a sphere of its own; chiselled busts and elaborate painting attract more admirers than the humble photograph; but ever and anon there comes a time when the little brown prints speak with more eloquence than the broadest canvas and the whitest of marble. It is with the deeper feelings of our nature that photographic portraiture has to do; more sweet memories and tender thoughts are awakened over a photograph than are called up by a score of paintings. The soldier stricken down on the battle-field, the sailor swept from the deck by an angry sea, still live brightly in our memory, kept green by the faded carte that has since become a household treasure; while the emigrant on a far-off shore can carry himself back to his native land and the loved circle at home every time he ponders over the portraits in his pocket-book. Photography has entwined itself so closely around our affections that an honourable position is assured to it for ever.

## ON GROUPS.

THE photographer may divide group work into two classes: one class in which he has to deal with a multitude of models at the shortest notice, as in the case of wedding-groups, club groups,

society groups, university groups, &c. ; and the other, in which half-a-dozen, more or less, of a family require to be depicted. As regards the former class, from the nature of things, the result may usually be predicted a certain failure as an artistic work ; for even if the photographer possesses qualifications for his task in the highest degree, he is powerless to employ them in the few minutes at his disposal. All he can hope to secure under the most favourable circumstances is a picturesque grouping of the company, marred more or less by incongruous costumes and awkward poses. In a word, the photographer—if he is permitted—must quickly convey to the company a general idea to be carried out, and hope for the best.

But it is different with the other class of groups, and it is of these we intend to speak. There should be no haphazard work here ; the group picture we refer to is one that is frequently called for, and would be demanded more often still, if photographers could but satisfy their customers.

A family group is one of the most difficult tasks to undertake ; so difficult, indeed, that some photographers refuse it altogether. Still, it is work that must be done, for a time arrives sooner or later in the tide of affairs when paterfamilias desires a picture of those nearest and dearest to him. The cost of such a picture is, in many cases, a matter of secondary consideration. The family begins to be scattered—the daughters marry, the sons are working for homes of their own ; a few years longer, and there may be a void here and there in the circle. They meet together still, at long intervals, under the paternal roof ; but father and mother best know how rare these opportunities grow' as time wears on. An effort has now been made to assemble the whole family, and on this occasion it is—may be for the last time—that the photographer's aid is invoked to depict the family group.

Now, the principal fault we find with photographers in taking pictures of this kind is, that they do too much, rather than too little. They are too anxious to please, and so over-do it. The aim is generally taken too high, and the picture misses its mark. Everybody in the picture seems so intent upon doing something, that you cannot but think they are only making-believe : the group is over-loaded with incidents.

Sometimes we get a group of six individuals busily engaged in six different tasks or pastimes. One is pouring out tea,



another playing the violoncello, a third knitting, a fourth painting, &c., &c., and all of them hard at it, too. It surely is a most remarkable coincidence that just at the moment when Charles is beginning to play the fiddle, Maria to raise the teapot, Lucy to knit the baby's socks, and Tom to lift his brush with a view to putting in the sky of a water-colour sketch, that a photographer, of all men in the world, should have popped in with his camera, and depicted the happy family then and there. It is apparent, from the picture, that they must have been taken unawares, so terribly busy are they all. Or, stay—does it not remind one rather of Præd's lines, in which the poet describes the effects of a morning call by the village magnate?

“ Whene'er they heard his ring or knock,  
Quicker than thought the village slatterns  
Flung down the novel, smoothed the frock,  
And took up Mrs. Glasse or patterns,  
Alice was studying baker's bills;  
Louisa looked the queen of knitters;  
Jane happened to be hemming frills;  
And Nell, by chance, was making fritters.”

It may be said, in explanation, that it is Charles' avocation to play the violoncello, that Tom is a painter, that Maria always presides at the tea-table, and Lucy looks after the little ones' wardrobe. We have not the least doubt about it, only it will be difficult, we think, to get their friends to believe that they are always hard at it in the manner depicted.

The fault, as we have said, lies in overdoing the incident. Group pictures, as a rule, suffer from too much incident rather than too little. The object in view should be a singleness of purpose; to show that even in the event of this one or that one being engaged upon some occupation, the occupation is subordinate to the general motive pervading the picture. No doubt the arranging and successful carrying out of such a group-picture is a difficult task; but then the achievement of success always is difficult. The first thing is to have some well-conceived notion in your mind; the next to carry it out.

Portraitists, whether they are successful painters or successful photographers, make a study of pose; when they see a graceful posture or pleasing position in a gallery or collection, they study the posture and acquaint themselves with the reasons that have contributed to make it graceful and pleasing. Those ready with

their pencil are for ever sketching outlines of this figure or that, to be elaborated hereafter on canvas or paper. On two occasions—once in the Tyrol, and once in Italy—we were so fortunate as to have as companion on our travels a clever artist, who brought back with him from the tour several score of sketches of character, to serve as hints in picture making. Here were three old peasants leaning over a bridge smoking long pipes, and chatting; here a railway guard forcibly gesticulating before an erring passenger; here an old woman comfortably asleep beside her stall in the market place; here a group of boys watching the post wagon while the horses are changed. Whenever our friend saw a bit of character, a pose or attitude that was quaint or original, he noticed it for future use. He did not mean to create the poses in his next picture, but copy them out of his vast collection.

In the same way, photographers should glean information on the subject of groups. It is not enough to carry in the mind's eye certain ideas or schemes; they should make a note of every picture that pleases them, and study to imitate its virtues. Paintings of groups there are in plenty, engravings or photographs of which are accessible; and also photographs now and then that would well repay study and analysis. From Germany have recently come several group-photographs embodying good ideas; one of these may well be described. It represents paterfamilias' birthday; and birthdays in Germany, especially in connection with the head of the family, partake something of an official character. There is a presentation of gifts and felicitations, not in a promiscuous fashion, but with something of pomp and circumstance. Papa sits in the drawing-room in state, and receives the birthday procession, headed by the little ones and mamma, while the rest of the family gather round. Some have gifts and flowers in hand; but all are there with the same object—that of wishing many happy returns of the day. The group is so successful that, for the moment, the idea or incident has more weight with the spectator than the portraits; and yet it was simply for the purpose of securing the latter that the little scene has been presented.

Another picture—this time the production of the famous house of Loescher and Petsch, of Berlin—may be also briefly mentioned before we quit the subject. This is a group of mother, son, and two daughters. The eldest daughter, standing, is

reading a letter containing some important news, for her sister looks over her shoulder, while her mother, sitting in an arm-chair knitting, stays her hand for the moment, and looks up; the son, too, a newspaper in his hand, ceases from his reading to listen to the epistle. Here, as in the other picture, the spectator wonders what can be in that letter to interest, rather than looks at the group as a mere collection of portraits. There is a main incident, and there are lesser incidents, but the latter are not permitted to force themselves upon the attention of the spectator, and the result is a composition full of motive, and yet quiet and subdued in character.

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### VANITY FAIR.

RETOUCHING, like most questions, has two sides to it. You may work over the whole surface of a negative with a black-lead pencil, so as to leave not a single trait in its original condition, or you may leave a negative alone with all its technical imperfections upon it; in neither case is the result true to nature. Some might be disposed to argue that, of the two extremes, the latter is at any rate to be preferred, for the hard metallic surface, sometimes imparted to the features of a portrait, is, of all things, the most unnatural, resembling more the smooth aspect of a steel visor than a face of flesh and blood. But then, on the other hand, with equal force, it may be averred that the blonde damsel, who is represented in an untouched photograph peppered all over with ugly spots, and with a face disfigured apparently with the measles or other loathsome disease, is far more deeply libelled. In any case, we fear the portraitist who, in the interests of truth, would push photography so far beyond the limits, as to decline interfering with the eccentricities of sensitive film or developer, would very speedily be relieved of his task altogether; there are few of us who care to be represented more ill-favoured than we naturally are.

It must, then, we think, be generally admitted, as matter beyond argument, that the practice of retouching, to a limited extent, at any rate, is not only defensible, but, indeed, absolutely necessary at times, to rectify the vagaries of a camera picture. And here we may remark that camera pictures were



inveighed against in this world long before photographers came into it. People used to be posed before a *camera lucida*, and, as they sat silent and motionless, the outlines of their figures were quickly sketched with pencil or brush. Lawrence Sterne speaks of these portraits in *Tristram Shandy*, and very deprecatingly, too. "Others," he says, "will make a drawing of you in the camera; that is most unfair of all, because there you are sure to be represented in some of your most ridiculous attitudes."

But this by-the-bye. The pose of a figure in a photograph is frequently subject for complaint now-a-days, but not so retouching. Few sitters, strange to say, complain of the use of the pencil. Vanity in this world is so deeply rooted, that if you pander to it, in nine cases out of ten you will succeed in pleasing your visitor. There never was a greater mistake than to suppose it is only a young lady in her teens who is vain of her looks, and none know this better than photographers. In this respect they come into closer relations with the world than any one else; they are the stall-keepers in *Vanity Fair*, and they know but too well the nature of the wares the public like best.

The difficulty the photographer experiences is to hold the balance evenly. He must not retouch to an absurd degree, and yet he must employ the pencil in a measure; always rather more than less is probably justifiable, if he wishes to find favour with his patrons. We have heard photographers, and experienced men, too, of high standing, vehemently protest that the public will not be satisfied with a true portrait; their ugly points must be fined down, their fine points must be pronounced. Five years at least has to be stricken from their age; while the majority require a rebatement of ten. As we have said, it is not alone young women who are vain, nor young men. The old and middle-aged furnish plenty of examples—how many, the photographer alone, of all men in the world, is best acquainted. Clever men, who have made their mark in science, in letters, in art—men whose names stand so high in the world that one might imagine them altogether above the small vanities of their fellows, prove, time after time, that not only do little things please little people, but big people as well.

We recall an example of this kind that struck us very forcibly some time ago. The late Mr. R. T. Crawshay, of Cyfarthfa Castle, was, as everybody knows, a clever portraitist; indeed, his ability in this branch of the art was more than once recog-

nised by a medal from the Photographic Society. His portraits were bold and forcible, and posed with much taste; moreover, they were not retouched, beyond the "spotting" that is always more or less necessary. A visitor rarely came to the Castle without sitting to Mr. Crawshay, and on one occasion he had as guest a noted officer of one of the great London hospitals, a man a little past the prime of life. In his particular sphere this gentleman was second to none, and his name was as a household word in his profession. He sat to Mr. Crawshay, and the latter succeeded in securing what most of the visitors at the Castle pronounced a good likeness. The sitter accepted a copy on his departure, but next day came a letter to Cyfarthfa, entreating that no further prints be struck off; he would send down half-a-dozen copies of another portrait, and begged acceptance of them. We had an opportunity of comparing the two pictures. Mr. Crawshay's portrait was that of a man approaching fifty—the features firm and set, the hair and whiskers streaked with grey; the other portrait was a little brown vignette, the features smooth and delicate, the whiskers soft and slight, the hair brown and luxuriant. The last was a well-pencilled likeness taken ten years before, and the model had evidently made up his mind that no other should ever be issued of him—he would never be so young again. Mr. Crawshay, out of deference, destroyed his negative, so that no copies could possibly get abroad; but scarcely had he done so, than his former guest died, and bitter was the disappointment of friends and relatives to find no recent portrait of the great man in existence.

It is pretty evident, then, that a photographer who wishes to live by taking portraits must employ the retouching pencil. The young American lady who lacked beauty, and whose frank avowal was, "I mayn't be pretty, but mother says I've got the intellects in me," has few counterparts in this country; rather it would seem that those who have least cause are the most vain. Mr. Simon Tappetit was, according to impartial evidence, not an Adonis, and yet he spent most of his spare moments before the looking-glass, examining into the exact state of a pimple upon his nose. Most of us in this world have pimples of some sort or another—not always on the nose—that we are very anxious about, and if the photographer can only discover at the outset what is the peculiar weakness of his patron, he will be already half-way towards pleasing him. For whatever the size

or nature of the pimple, we prefer to have it as inconspicuous as possible in our portraits. In most cases we suspect it is the matter of age that has to be got over, and a difficult matter it is, too. Thus the avoidance of top-light, for instance, is an important essential, for if this does not exaggerate a tendency to baldness, it frequently has the result of making a parting more visible. The recesses of the eyes and the prominence of the cheek-bone are also obstacles to which the photographer must pay particular attention, if he does not desire the pictures thrown back upon his hands. In fact, much retouching is rendered unnecessary if the photographer thoroughly understands lighting his model, for just as heavy shadows falling in unpleasant places seem to add years to a sitter's life, so skilful illumination may impart both youth and freshness to a portrait.

We have said that in the opinion of good judges, the public will not be satisfied with a just and true portrait. We do not propose to discuss the dictum, but we think it is very likely to be true. At the same time, the photographer must remember that, if the public are not fair towards him, he is sometimes unfair towards the public. There is such a thing as producing a portrait that represents the sitter older than he or she is; we will go even farther, and say that the unskilled usually produce portraits of this kind. This is the reason why retouching is so frequently resorted to. The pencil is employed to compensate for bad photography, and in these circumstances the work of the retoucher is unjustified. It is this, more especially, that tends to bring retouching into disrepute.

In conclusion, we would remind our readers not only that they live in *Vanity Fair*, but, to be successful as portraitists, they must study to purvey such articles as are in request at that fair. In doing so, there is no need to degrade art, and they will do wisely and well who "o'erstep not the modesty of nature."

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## THE PUBLICATION OF PHOTOGRAPHS.

THE reason why pictorial photographs are so rarely produced is to be found in the difficulty of publishing them. There is plenty of talent among photographers now-a-days, but it cannot be turned to profitable account in this direction. The number of pictures exhibited during the year might readily be counted upon



one's fingers ; for photographers find that it is in the production of carte and cabinet prints that any due return for their labours can be secured. If a photograph is not copied to these dimensions—and such small sizes are, of course, too circumscribed for ordinary pictorial effect—then the utmost difficulty is experienced in putting the work before the public. In the same way as an author does not write with a view to keeping his manuscript locked up in his desk, or a manufacturer produce articles for the mere pleasure of stocking his warehouse, so the photographer can scarcely be expected to set to work, unless some outlet for his talent is available. Even the salmon-legged mountebank, who does his posturing on a bit of carpet spread in the dirty road, refuses to go through the business of tumbling in a side street all to himself ; he wants an audience of some sort, otherwise he puts on his long limp overcoat again, and goes off with his friend of the drum and pipes to seek a better field for his talents. There must be a demand in the market, or else there will be no supply ; and although supply often creates a demand, this is only the case when the supply is properly put before the public.

We have said that so far as cartes and cabinets are concerned, there is little difficulty about publication ; but we do not mean to assert that we have attained perfection even in this respect. Photographs are a novel article of commerce, and it is at the fancy repository rather than among the goods of the *bonâ fide* print-seller that they are to be sought. In short, the prints that get into the market do so under the guise of knickknacks, and not as pictorial productions at all. Many of the cards possess high merit, and, as we know, secure ready purchasers ; but it is only because they are small, and can be placed conveniently in the shop-windows. Indeed, it will surprise many to hear what an enormous sale some of these little prints have. Rejlander's Ginx's Baby sold to the extent of five thousand copies within a twelvemonth of its publication. An edition of 20,000 of Mayall's carte of the Prince and Princess of Wales in their bridal attire was exhausted within a few months. Mr. Payne Jennings issued no less than 90,000 of his little summer sketches one year for Christmas and New Year's cards, and yet the demand was only half supplied. Mr. Frank M. Good's studies of flowers and plants are so popular that the negatives are steadily kept in the printing-frames : while, to take more recent examples, the Thames photographs of Mr. Mayland, startling with life and motion, and the

delightful studies of swans by Messrs. Marsh Bros., have kept both firms in activity for a long time. A single negative of the Prince of Wales taken by Mr. Charles Watkins sold, as everybody knows, not long ago for £180, after some thousands of prints had been taken from it; and the Balmoral picture of Lord Beaconsfield, the statesman represented in his well-known velvet jacket, is said to be as good as an annuity to Messrs. W. and D. Downey.

We repeat, so far as small photographs are concerned, there is no lack of publicity, and consequently of sale; but with pictorial photographs, to use the term for work of larger dimensions, the encouragement given to the photographer is of the smallest.

The pictorial effects of Mr. Robinson are purchased by painters and students, because this class of customers happen to know of Mr. Robinson's wonderful seas and skies, and use them as studies; but with the public generally, they command only a limited sale, for the simple reason that the public generally know nothing about them. There is an exhibition once a year in Pall Mall, where photographs may be seen, and where they are seen by some ten thousand visitors annually; but the time of holding it is in the autumn, when anybody who calls himself anybody is out of town, and when there remains but a couple of hours of daylight in the middle of the day fit for the examination of photographs. We do not ignore that there are photographic publishers both energetic and well conducted, but they are very few in number, and, as a consequence, unable to respond to the calls made upon them. A good engraving might be exhibited in a hundred shop windows in London to-morrow, and in every provincial town there would be repeated opportunities for showing it; but photographers, so far, have no such advantage, and the number of shop-windows or galleries in which large prints are admitted do not amount to a dozen, probably, throughout London. And, unfortunately, the publishing trade being in so few hands, photographers, as a matter of course, have to put up with the disadvantages of limited competition.

Naturally, it is only a question of time. How long the present state of things will last is uncertain; it will depend upon the army of photographers itself in a measure, and upon the progress of photography in the direction of the fine arts. The Exhibition at Pall Mall only requires to be directed with energy and *savoir faire*, and to be thoroughly well advertised, to make it one of the most successful shows of London. The London Exhibition now

pays for itself—in some years there has been a profit of £50 or £60—and, in the hands of a businesslike manager, it might be made still more lucrative. All this is in favour of photographers; for the more widely an exhibition is visited, the better are the productions known, and the greater is likely to be the demand for them. Mr. Slingsby's picture, "Alone," is, perhaps, the most successful pictorial photograph in the market, and, in this case, it was years before its sale commenced. Its first appearance was in the Exhibition at Pall Mall, where it was admired a good deal, and secured its author about a score of purchasers. Among the latter there might have been one or two persons interested in the sale of pictures; but "Alone" was never systematically pushed by a publisher, or, if it was, certainly without any marked result. For many months but very few copies of Mr. Slingsby's picture were sold; then it began to advertise itself on its sheer merits, and it was not, curiously enough, until three years after the picture had been exhibited, that the sale became comparatively brisk. A little while ago Mr. Slingsby had taken upwards of £500 for his picture, and, at this moment, the takings have probably increased by £200 more. Mr. Slingsby did his best to get his picture adequately published as soon as it was exhibited; in this he signally failed, and it was only after some disappointment that he found good fortune gradually smiling on him, and the picture surely and thoroughly doing its own work. Had the production, however, not entered the few favourable channels at first, Mr. Slingsby would have gained no more by his labours in this special instance than many of his brethren before and since. We do not mean to say there is no sale for pictorial photographs; we wish merely to emphasise the fact that their production pays inadequately by reason of the difficulty of publication. For this reason it is many photographers cannot afford to spend labour and pains upon the production of them. As soon as it is plain that good remuneration will follow good pictorial work, we may be sure more of our foremost photographers will not be wanting in their efforts to produce photographic pictures.



## WORK AND WAGES.

THERE is one very good reason why few assistants in photography receive a high salary. If they are successful in portraiture, it either pays them best to work for themselves, or, what is the same thing, it pays their employer to receive them into partnership, or, at any rate, give them an interest in the business. There are, no doubt, still instances of high rates of pay to assistants on record, but they are merely the exceptions that prove the rule. For instance, we know of one West End firm which has concluded a three-years' engagement with a gentleman at the rate of ten guineas a week, the engagement not even stipulating that he shall perform photographic manipulations at all; in fact, he is an art assistant who walks from one studio into the other to pose the sitter. Another chief assistant we wot of, receives seven guineas a week, and indeed it is not unusual at all for the principal of a first-class studio to pay a salary of five guineas, when the head of the firm does not occupy himself with posing.

When in Paris not long ago, we had a conversation with the chief of one of the leading houses upon the subject of assistants, and he informed us that artists *du premier rang* obtained 500 francs a month—as nearly as possible, therefore, the rate of pay in this country—but that occasionally a higher and exceptional sum was given. Thus a thousand francs a month (£40) was mentioned in one instance; but when a man finds he is worth this to his employer, he naturally argues that he can make much more by working for himself. And if he is steady, straightforward, and business-like (all artists are not), the chances are that he does both wisely and well.

Assistants *du premier rang*, as our Paris friend styled them, are so few—for the reason that most of them take to business themselves—that those in the great European cities may, he told us, be counted upon one's fingers, London, Paris, Vienna, and Berlin number, perhaps, a score between them, and for this reason it is scarcely worth while to regard them as a class. If a photographer is a thorough artist, then, like all other artists, whether they be painters, draughtsmen, poets, or actors, his income depends upon his individual exertions, and is not to be governed like that of army men, civil servants, and professional men who belong to a certain grade or class. In a word, chief

assistants in photography are outside any rule or regulation, and these we shall leave out of the question, therefore, in discussing the work and wages of photographic *employés* generally.

We may divide the *personnel* of an establishment, whether it is of first or second rank, somewhat as follows :—

Chief Assistant or Operator

Retoucher

Printer

Dark-room or Assistant Operator

Mounter

Spotter

Keeper of Books and of Reception-room.

Naturally enough, two establishments are never conducted on like principles. There are some houses, where a vast amount of work is performed, in which the studios are subdivided to a much greater extent; and others—especially in these days of gelatine—where two or three assistants, male or female, amply suffice for the due performance of all work. Again, there are firms in which the principal is—as he should be—the chief worker and directing spirit of the establishment; and others again in which he is but the business manager, leaving both the artistic and technical duties in the hands of his employés. In the latter case the chief assistant or operator (as we suppose we must call him, much as we detest the word) must possess of necessity some degree of art culture, and should be thoroughly well paid; but if he is under the direction of the principal, then, naturally enough, he can expect but a moderate wage.

Two and three guineas a week now-a-days appear to be considered good pay for a competent operator, and if he works cleanly, and is thoroughly competent to manipulate wet and dry plates, it is certainly not a high sum. But thirty shillings to thirty-five is by no means unusual, we are sorry to say, if a well-educated and highly-trained operator is not sought for. Many principals demand merely that their assistants shall know no more than how to work a clean plate, and in that case, high wages are scarcely to be looked for.

A good retoucher should be able to claim not less than two guineas a week; in Paris we heard of an Italian (Italy seems as famous for its retouchers just now as Germany was five years ago) who drew a monthly salary of four hundred francs, or six-

teen pounds. But many firms have lately made a practice of having their negatives retouched out-of-doors, excellent work being performed at the rate of sixpence for a carte negative, and ninepence or one shilling for a cabinet. All negatives are more or less retouched, as everybody knows, at the present moment, constituting an additional tax on the photographer's wares.

The term printer is a very vague one, and photographic printers receive all sorts of wages. Twelve years ago we knew a Cambridge firm which paid its printer three guineas a week, but we doubt whether in London or the provinces there are many such berths to be found now. Two guineas now-a-days is looked upon as unusually good wages for a printer who will go through with the toning, &c., and who is supposed to understand the most delicate vignette printing. Printing of plain pictures may well be undertaken by a youth or girl with wages of 15s. or 18s. a week, and a competent printer of experience is expected for thirty shillings, who must not produce too large a percentage of waste pictures, and understands something about combination printing.

The assistant operator in the dark room who cleans and coats plates (gelatine workers, we are told, are able to do without one) is supposed to be learning his duties and improving himself, and must therefore fain content himself with a wage of eighteen or twenty shillings a week; while girls who occupy themselves with spotting and mounting enter usually with eight or ten shillings a week, and when skilled at their work, generally secure twice that amount. Rough spotting may be learned in a week or two, but in first-rate houses, where something more is required of the spotter—touching in the highlights, &c.—then not only is better pay given, but less work is got through. Six dozen pictures to spot and touch is considered a good day's work at some establishments, while in others not less than a gross is expected to pass through the spotter's hands.

To keep the books neatly and accurately, a duty which is not unfrequently coupled with that of attending the reception room, demands tact and an aptitude for business. If a lady happens to be a good saleswoman, she may well be the most valuable of all the staff of assistants, for upon her depends a very great deal indeed. A keen perception, ready wit, a manner not too



obtrusive, and yet frank and pleasant withal, are qualities extremely rare, and deserve to be recognized when they are present. The lady entrusted with reception room duties has a most difficult task to perform, and if she performs it successfully, deserves to be well recompensed.

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### PUPIL TO A PHOTOGRAPHER.

An advertisement frequently to be seen is the following :—"An active and intelligent Youth of 16, well educated, is desirous of entering a good Photographic Establishment, where he could learn the art thoroughly, and make himself generally useful."

The above and its fellows prove plainly enough two things : that photography has now attained to an attractive position, and that there is needed some systematic method of educating photographers. We know very well that studios of high rank are to be found where pupils are welcome, and where they have the advantage of a competent teacher in the technics of photography, as well as in the arrangement and lighting of the model. But no photographer, however competent, is likely to supply all that an aspirant requires to make him proficient in the art, any more than a Royal Academician, distinguished as he is, might be able in himself to train a painter. Fortunately, the teaching of a photographer and the teaching of a painter or draughtsman go upon the same lines in a great measure, and if a youth desires to become a photographer, and to achieve success in his calling, it is not only desirable that he should have artistic taste, but artistic knowledge. In a word, he should have both liking and ability. Many excellent art schools are now within reach of students of all classes, so there is no excuse for a young man now-a-days lacking the rudimentary principles of his calling.

It does not follow that a pupil entering a photographic studio does so with the intent to adopt the calling of a photographer. It may be with that object that he desires to familiarise himself with the art-science, and it may not. We have lately spoken with two gentlemen, both of them enjoying high rank as artists, who are extremely anxious that their sons should become masters of photography. But whether these young gentlemen remain photographers all their lives is a matter of secondary considera-

tion; this will depend upon circumstances. They have both of them a taste for art, and desire to become artists; their parents are anxious, therefore, that they shall be in a position to produce pictures not only with pencil and brush, but with the camera also. In fact, it comes to this, that artists look at the camera as one means the more at their disposal. The camera has become so important a tool of late, that they cannot afford any longer to disregard it; therefore, they say, in future, not only must aspirants be taught to hold the pencil and ply the brush, but to develop a sensitive plate into the bargain.

Art students, no more than other people, can say at the outset of their career what their particular calling in life will be. One becomes a portrait painter, another occupies himself with water-colour sketches, and a third confines himself to the draughtsman's art. The first would be quite incapable, in all probability, of drawing upon wood a cartoon such as appears in *Punch*, or in other magazines, while the last, very likely, has never painted a portrait in oil that has been recognised by kith or kin. Each has adopted a particular line into which he has fallen, and makes what money and reputation he can in that branch. An art student, like the rest of us, tries his best with everything within his reach, with pencil and with brush, with oil pigments, water pigments, chalk, or black-lead pencil, and to those he will add in future the camera. He may in the end turn photographer, or he may not; he will just take up one art or the other, according as he excels, or circumstances dictate. Photography is not to be denied; it has forced itself upon the attention of artists, and those who would avail themselves of all means at their disposal must make a study of our art-science.

We are far from asserting that an artist only follows one branch of art; that would be absurd. But, as a rule, an artist derives his income from one particular line of art only. There are painters like Millais, who are famed both for portraits and landscapes; or like Leighton, who are sculptors as well as workers on canvas; artists like Fildes and Fred Barnard, who ply both brush and pencil with equal success; but the majority work persistently in one groove. They are professional painters and *dilettanti* draughtsmen, or *vice-versa*; in other words, if they can draw well, they paint better. On the roll of photographers we have many excellent painters, who exhibit in the Royal Academy and other noted London galleries. Mr. H. P. Robinson, of

Tunbridge Wells, earns probably as much by painting as by photography; the late M. Adam-Salomon, of Paris, skilful photographer as he proved himself, was not less a sculptor of the highest rank, as witness his work at the Royal Academy Exhibition; Herr Max Petsch, of the well-known firm of Loescher and Petsch, of Berlin, after oscillating for some years between the palette and collodion, now works only with the former; the late O. G. Rejlander worked alternately with the camera and with pigments, as he could best earn a guinea, a favourite saying of his being that photography in art was what steam was in navigation—you got to your destination so much faster; Mr. Robert Faulkner has a high reputation as an artist in crayon; Mr. Robert Slingsby, of Lincoln, has distinguished himself as a water colour painter, and so has, we believe, Mr. Harvey Barton, of Bristol. We could, indeed, extend the list of capable painters and draughtsmen among photographers very considerably, if any purpose were to be served by such record, just as we might recite the names of many of our best painters who are either photographers, or make use of photography in their daily work. It is enough to show that the camera has now become a familiar tool among artists, and that photography is so intimately connected with artistic work that students must henceforth cultivate its acquaintance.

That many art students will eventually adopt the calling of photographer as their career in life is very certain. If an artist will thoroughly learn the technics of photography, not simply be capable of producing an image upon a glass plate, but able so to govern exposure and control development in the manner in which a Russell Manners Gordon can, then photography cannot fail to fascinate and attract as a fine art. The technics of photography are not more difficult to acquire than a knowledge of mixing pigments, and their mechanical application to canvas; but that the former requires to the full as much practice and experience is a fact beyond contradiction.

Nor can it be urged that the study of photography is unlike the study of pigments in the circumstance that some knowledge of chemistry is indispensable to the production of successful negatives. Painters have also to do with chemistry, and it would be well indeed for them if they devoted more attention still to science. There is a professor of chemistry attached to the Royal Academy at this moment, and has been for some years



past, to instruct painters in the composition of the pigments they employ, to teach them how to secure brilliancy for their painting and freedom from change of colour. It cannot be said, therefore, that photography is set apart, for the reason that it is mixed up with chemical knowledge.

This circumstance brings us to a point that is probably the most important in the training of photographers. How are they to learn thoroughly the chemical elements of their art? As we have said, the practised photographer can teach the pupil much, but even if he had the opportunity, he has not the means to impart the necessary chemical education. Of late, it is true, there have been lectures upon photographic chemistry by able professors delivered in London; but we want something more than this. We want a technical photographic school, where the theoretical and the practical would join hands. No doubt, in time, we shall get something of the kind, and it is indeed matter for congratulation that we have, during the last twelvemonth, already secured so much. Perhaps one of these days there may be such an institution established upon the model of the Royal Academy, in which professors both of the art and science of photography will find a place.

### WITH THE CAMERA ON THE CONTINENT.

GELATINE plates are likely to add to the number of tourists who journey with a camera, and many a traveller bent on paying a visit to Switzerland, the Black Forest, or the Tyrol, will carry with him photographic apparatus, in the endeavour to bring back a pleasant reminiscence of his trip; and let us tell our readers that no more charming *souvenir* of a summer's outing, especially upon foreign soil, can be obtained, than photographs taken by yourself on the spot. Purchased pictures are another matter altogether. They may be like the lake, mountain, or village as we ourselves have seen it, or they may not. The photographer himself, on the other hand, has seen and admired the object precisely from the very point of view he has chosen in his picture; and not unfrequently every negative has its history, to be vividly called to mind whenever we gaze upon the picture. Where friends see but a quaint Tyrolese chalet in

your picture, with carved balcony and stone-weighted roof, you are reminded, possibly, of a famous skittle party among the villagers, in their sugar-loaf hats and embroidered braces; or possibly of an evening with the zither, when the trim waiting-maid, in her short blue skirt and neatly-braided hair, having attended to your creature comforts, seated herself in the balcony, and, with plaintive voice and clear-ringing falsetto, sang, "Die Berge von Tirol."

And here one word of advice as to the choice of objects which will afford the best *souvenirs* of a tour on "the Continong"—and it is advice, we may mention, put forward after repeated visits to the Beauty Spots of Europe. It is this: rather than depict the waterfalls, the lakes, the mountain peaks, and other natural beauties, select characteristics of the place and people. A waterfall, be it ever so gigantic; a peak, ever so high; a lake, ever so broad and placid, do not afford such trite reminiscences as objects to do with village life and personal customs. Thus an old church, a quaint farm-building, a public fountain, an old-fashioned hostelry, a crooked street, a mediæval town-hall, a country stile, a pair of rival Custom-houses on the frontier, a lumbering post-waggon—such things as these, which have a local history, and are inherent to the country, will be found far more profitable investments with the camera than woodland or covert, however beautiful, since the latter are to be found alike in many countries.

We have never journeyed with other than dry plates, and we may mention, for the information of those inexperienced in travelling on the Continent with photographic apparatus, that we have never met with difficulty in the passing of packages through the Customs. Our plates were first packed in either fours or sixes, according to the number of double dark-slides in our outfit, and these small packages then put together. An order to undo the packages was rarely given. The only instance in which we remember to have had any trouble was at the Copenhagen Custom House, when on our way to Norway; but here the officer was satisfied with an explanation that the plates would be useless if opened to the daylight. At Isella, on the Simplon route, and the first Italian village, where a sergeant and three *gens d'armes* are located, their muskets hung up in formidable array outside the guardhouse, we were also once delayed and instructed to exhibit the whole of our apparatus. But the reason

of this, we afterwards found, was not to satisfy the exigencies of the State, but because the serjeant personally took an interest in photography. Still, always keep your packages small, is a maxim to be remembered.

Gelatine emulsion plates, strange to say, do not seem to be so much affected by the sea air as collodion emulsion. At the same time it is obviously very desirable that a body like gelatine, which is so susceptible to damp, should be guarded as jealously as possible from its influence. Our plan, after wrapping in orange and black paper, is to envelop the package in caddy tin, a thick tin-foil, which is less subject to tearing than the ordinary material. In two of our Continental journeys—once to the Tyrol and once to Thuringia—we carried the Warnerke dark slide, with tissue upon the rollers sufficient for forty pictures. The Warnerke tissue we found to possess one very great advantage beyond its portability, &c., over our ordinary dry plate outfit, and for this reason it is to be hoped that the day is not very distant when we shall be able to employ gelatino-bromide in the form of tissue; the advantage was, that you had no anxiety about husbanding your sensitive material. Supposing you had two double dark slides, and allowed yourself four plates a day, you were always anxious, on the one hand, lest you should throw away a film on an underserving object early in the day; and on the other, that all your plates should be exposed at the end of the day, for packing and repacking odd plates is indeed a trouble. With a roll of tissue, however, you may make five, six, or seven exposures one day, and none at all the next, if it so please you.

Since our tours were made for the most part with the knapsack, the question of carriage was all-important, and only from three to four dozen 5 by 4 plates were the utmost we could carry. No dark box or bag found a place in our outfit, so we were led to all sorts of shifts and contrivances to change the plates in the dark. In Norway, a most ludicrous incident befell. Our first batch of plates were exposed, and as evening came on we prepared as usual to make the change under cover of the night. Suddenly it struck us we had reckoned without our host. Night came, but no darkness; you could see to read throughout the four-and-twenty hours. So the unpleasant plan of being half stifled in a cupboard during the changing operation was once more resorted to.



We had another good reason for remembering the brief nights in Norway, and a little landscape picture we have brings the circumstance vividly before us. Our pedestrian party lost itself crossing the Scandinavians, not very far south of the Arctic circle. We well remember the scene. In front stretched an endless moorland, covered here and there with broad patches of white—congealed snow or glacier—and intersecting the country in all directions were rapid torrents and brawling streams to impede the traveller's progress. It was like a deserted laundry-ground on a gigantic scale. As you plodded onwards across this silent kingdom of desolation, hour after hour, for ever surrounded by brown moorland, glaciers, and snow-fields, by noisy torrents and broad lakes, the solitude and loneliness began to enter your very soul. An endless wilderness was all around, and, save the sound of rushing waters, there was nought to be heard but the mournful notes of some marsh bird—a sort of plaintive whistle maintained incessantly day and night—a sound so dismal and monotonous as further to depress one's spirits, and render desolation still more desolate. We had, indeed, lost our way, and there seemed no prospect of finding it again. We toiled wearily on, trying to sight a hut or habitation; at last one of the party more tired than the rest suggested a halt. "Come to the top of that eminence and see the last of the sun," he said. We climbed up and watched the burning orb sink down into a lake of purple and gold. We ate a biscuit or two, chatted over our misfortune a little while, and then prepared to descend. "Wait a minute, here is the moon coming up; we might as well see it." We waited—up it came as red and fiery as before. But it was not the moon, it was the sun once more that came to tell us another day had begun, and that we had lost our chance of a bed for the night.

There are several spots where photography and sketching are alike forbidden—to wit, in some of the defiles of North Italy and Austria. Not long ago we were warned out of the magnificent Finstermunz Pass by a zealous sentry, because we set up our tiny camera in the neighbourhood of the massive fortress that bars the way southward. This taught us to be careful in future, and as nearly all the big valleys in the Tyrol are guarded not far from the frontier, the lesson was not thrown away. The German and French Government do not permit photographers near their fortresses, but as these are usually

situated in uninteresting spots, trouble is hardly likely to arise from this cause. Mr. England was once arrested on the Rhine with his camera, but this was in 1870, just as the war between Germany and France broke out. To be taken as a spy is not enviable under any circumstances, and more particularly when they get into the habit of shooting you first and trying you afterwards. In Mr. England's case martial law seems to have been satisfied by leading him to the frontier and discharging him.

In photographing in the South (and especially by the Italian lakes, or upon the snowfields of the Alps) the flood of light is frequently very distressing. After staring at crystal glaciers of glittering white, with the clearest of blue skies above, the eyes get quite untrustworthy, and darkness seems to intervene. We have stood behind a camera on the Mortarach Glacier, in the Engadine, on a cloudless day, rubbing our eyes and scarcely knowing whether it was dark or light; and this, too, with blue spectacles to protect the sight. In a word, the light loses its excessive brilliancy to the retina. Mr. England's practice of always employing a peak to the lens, which shuts out the glare, just as the peak of the cap shields the eye, is an arrangement that cannot be too highly commended, and it may, if suitably used, be made to counteract the shortcomings of the ordinary drop-shutter.

A diary should always be kept of each exposure. In some of our late travels we had the good-fortune to travel with a clever draughtsman, who was kind enough to make a rough pencil sketch of the salient features of the view; this was of great assistance afterwards, when developing the details of the picture. For when it comes to developing three or four dozen plates a month after they have been exposed, a little prompting is very essential; otherwise, it may not be until the detail has come and partially gone again, that the true nature of the image is recalled to one's mind. The character of the light, the time of exposure, and the size of the stop are three items that should obviously be noted, unless the plan is adopted of estimating the exposure by arbitrary figures, such as 1 to 4. A man who is familiar with the lens he is using will learn to make a very good guess of the value of his exposure, and, according to the light at the time being, and the period of exposure, he will enter against the plate in his book, the figure 1, 2, 3, or 4, signifying the

value of the exposure in his judgment. We are not so sure whether this plan, seeing the uncertainty of the factors with which a photographer has to deal, is not, after all, the simplest and best a traveller can resort to.

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## A NATIONAL PHOTOGRAPHIC PORTRAIT GALLERY.

WHEN are we to have a national photographic portrait gallery? Years roll on without any of the practical suggestions for the formation of such a collection assuming any tangible shape, and when at last the real importance of such a gathering comes to be understood, many of the valuable portraits now extant will, in all likelihood, be lost or scattered beyond recall. Mr. Maclachlan, of Manchester, was one of the first to call attention to the desirability of making a national collection, and since then many have spoken in its favour. At first the objection made to the course was the instability of photographic prints, and the undesirability of disbursing public money for pictures which, whatever their importance at the time, would rapidly deteriorate and become valueless. Another less pronounced reason was that the portraits would not necessarily be true; on the one hand, they might be monstrosities, or on the other, retouched out of all knowledge. This last objection need scarcely be regarded seriously. If photography is open to the charge of untruth, how much more so is painting! We may come across a photographic portrait now and then which provokes the remark, "I hardly should have known him!" but, with respect to a painted portrait, this is invariably regarded as a success if it only contains a "something" that is in the original. The occasional "un-likeness" in a photographic portrait is but the exception that proves the rule, and, unless there is every intention to deceive, it would be hard to pourtray a man with the camera whose portrait would not be recognized by friends. We say "friends" advisedly; for, as every photographer knows, nobody's dictum can be taken about his own photograph. Nine cases out of ten, with dissatisfied sitters, it is the clothes, and not themselves, that are disliked; and nine times out of ten, too, it may be said, a portrait at first disliked comes into favour after the sitter has grown two or three years older.



But to return to the idea of a national photographic gallery. There is no reason why it should not be placed under the authority of some of our great painter artists, if any fear existed on the score of injudicious retouching or finishing. All that is wanted is a small committee of capable men, who would take care that the photographs are likenesses, and that they are permanent. Being independent of the person portrayed—for few men care a straw about other men's good looks—they would be satisfied with most negatives taken in our good studios, and would scarcely object to the moderate amount of retouching usually resorted to. There would, indeed, be no incentive for pushing retouching to extremes. Where the pencil or brush is used to excess, it is with the full consent of the sitter, and photographers would certainly never expend money on expensive retouching if the work is not appreciated. This lady of forty-five is quite sure the wrinkles on her forehead are not so perceptible as in the photograph; and the gentleman of fifty may be bald, but not so bald as all that, he tells you. So the photographer must set to work and produce a portrait after the sitter's own mind. But, in the event of preparing pictures for a national gallery, there would be only the desire to furnish a thoroughly good photograph, and we might be quite sure that as the public is to be his judge, the photographer would use his best ability to send in a portrait that visitors would readily recognise.

The question of permanence is, of course, all-important, and we grant it would have been foolish to organise a collection of portraits of a fleeting nature. But at the present day there are many permanent processes to choose from. Besides several photo-mechanical printing processes—such as the Woodbury-type, photo-engraving, and collotype, which might possibly be objected to, for the reason that they scarcely produce pictures of the requisite size—there are several every-day methods on which reliance could be placed: the most recent is platinotype, the tone of which has not failed to secure warm encomiums from painters and draughtsmen. Mr. Spiller, the best living authority we have, declares platinotype to be permanent; and it is, in fact, difficult to see how a deposit of pure platinum—for the platinum black, of which the picture is composed, is nothing more than finely-divided platinum—could well be attacked under ordinary conditions. Printing in pigments or carbon

would be another plan of securing portraits for a national collection, and this plan would have the further advantage of placing at the disposal of the directors or trustees of the gallery choice of tint or tone, from jet black to light red, deep purple to pale blue; only, in making choice, it would of course be necessary to select a pigment on whose trustworthiness, in the matter of non-fading, implicit reliance could be placed. Further, there is the possibility of burning-in photographic portraits upon enamel or pottery, in case paper prints were objected to, so that the charge of "fleeting" can no longer be supported against photographic impressions.

Of course, there still remains the question, "Is it worth while?" What does it matter whether we have true portraits of our great men, so long as we have their works! Truly it matters little from one point of view; but then we might as well argue, is anything worth while in this world of ours? We can hardly take an interest in a man's work without taking an interest in the man himself. Nay, more; a man by his words or deeds may not only create an after-interest in himself, but in objects and things around, which would be without history but for his touch. There are Englishmen who visit Verona, for the mere sake of looking at the tomb of Romeo and Juliet outside the town, whose only existence is due to Shakespeare's pages. The Kaatskill mountains and the green-shored Hudson are attractive spots, but to none more so than the readers of Washington Irving. Travellers flock to Florence to visit Dante's birthplace; Protestants journey through the black pine forests of Thuringia, to gaze upon the old Wartburg Castle, in which Martin Luther translated the Bible. Soldiers go to Waterloo, to remind them of Wellington; and yachtsmen cruise the blue Levant, to dream of Byron and his "Maid of Athens." That most commonplace and grimy of burial grounds, Bunhill Fields, is the object of frequent pilgrimages, because it contains all that was mortal of dear old Robinson Crusoe; and people still wander about odd nooks and corners of London, simply because they were the home of some of Charles Dickens' characters.

If, then, we have so deep a love for spots upon which the shadows of great men have fallen, how keen would be the interest in portraits painted by the same shadows during lifetime! To have the features before us, not transferred by brush or chisel, but the actual shadow reflected from the living man

while yet in possession of health and strength; to have him before us as he looked, and smiled, and drew breath. A photograph of Shakespeare, of Dante, of Defoe, of Martin Luther would of themselves constitute a gallery whose interest would be greater than any storehouse of art in the world; and if these are out of reach, let us not lose such as may still be had for the asking. Wellington and Washington Irving may have been depicted in the camera; but, if so, the portraits are not forthcoming, and it is the same with many other great men who died during the first-half of the present century. Every day that closes adds to the difficulty of making a complete collection of all whose photographs are the only shadows left to us.

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### PAWNBROKERS' BARGAINS.

UNCLE loves not photographic apparatus; he cannot judge of its value. But for all that, do not suppose everything is a bargain that is picked up at the sign of the three golden balls. In our own experience, there is little to be gained by purchasing stray paraphernalia of an avuncular relative; there are now-a-days so many establishments of standing where second-hand apparatus may be obtained, with some amount of guarantee and trustworthiness, that if you have a definite want, and cannot afford to purchase the article spick and span new, still no necessity exists to resort to a general dealer. Nevertheless, there is an interest—we had almost said romance—in straying about among those nooks and corners in which the flotsam and jetsam of London life have been thrown—odds and ends stranded high and dry when the huge wave of prosperity has receded.

This is Drury Lane. It is not an aristocratic neighbourhood; but then, if you want quaint experiences, you must not search them in broad and fashionable thoroughfares. It is a fine day, and not only are the street and pavement full of wayfarers, but figures crowd the openings of the close brick courts that debouch into the Lane. Stout Irishwomen in bunchy skirts and plaid shawls across their strapping shoulders, who wear white frill caps over their unkempt hair, stand here in knots, and discuss household matters in a loud key; costermongers in well-worn cords and slouch caps, and long white pipes, adorn the exterior



of public-houses, whence issues a stale beery smell, all the more potent because it is a hot day.

The fine weather has its influence on a pawnbroker hereabouts. Had it been cold and frosty, he would have exhibited his stock of rusty skates; as it is, there is swinging over head a whole row of second-hand cameras. Here dangles one at 12s., next is one at 14s. 9d., a third is priced 25s. Moreover, in the window are some photographic lenses; but these are not easy to discover among the Dutch clocks and carpets, the concertinas, and cheap jewellery, and highly-painted pictures set out for the attraction of passers-by. Not a square inch of frontage is left uncovered by the heterogeneous merchandise, and even our relative's name is fairly covered up.

We enter, and look at the stock. That there shall be no deception, the camera—fitted with a lens marked Shephard—is held up for our inspection. The lens is directed to the street, and we see Drury Lane turned upside down on the ground glass. "Look at the colours," invites the shopman; and certainly the colours of the animated street are very striking. But there is no dark-slide, and this defect we point out presently. Our objection is very lightly estimated. "No, there is not; but the camera is quite complete otherwise. You can easily get one fitted for eighteenpence. The lens, you see, is by Shephard, one of the best sorts in the trade."

We turn to a larger camera marked 25s., which our friend assures us is called half-plate size, because it will take a 10-inch plate. "There is no name on this lens," we say. "No, there is not; that is why it is so cheap; if it were marked, it would be worth double the money."

We ask the particulars of a lens—a very bright article covered with golden lacquer. It is priced 22s. 6d. It is marked Shephard, and, we are assured, "it is a bargain, as it has never been used." A glance is enough to convince us of this fact; not only had it never been used, but it was quite incapable of use. Another instrument, however, was a fairly good one (a portrait lens), and, no doubt, well worth the seventeen shillings asked for it; and the same may be said of two cameras which were really serviceable instruments, provided they did not admit daylight, and for which fourteen or fifteen shillings were asked. To sum up: a photographer experienced in lenses and apparatus might have got his money's worth here, provided he purchased

things he wanted; but the chances were against any one else.

We proceed westward. Where St. Martin's Lane cuts Long Acre we turn off, and make our way to what is generally termed Newport Market. This narrow court is our destination, full of "general dealers" and cheap butchers. Drury Lane is an aristocratic neighbourhood compared to this. The thoroughfare is only a footpath, and, as most of the dealers have trays in front to display their wares, you can hardly get through the tortuous passage without jostling. There is a close, musty smell, that is very disagreeable. As a rule, the stock-in-trade is a right humble one. Here is a wooden wash-stand, its two back legs broken off, leaning against the wall for support; here an old tin fish-kettle so battered and rusty, it seems to have been picked off the dust-heap. Shells, pink and blue, and broken chimney ornaments, shabby bed hangings, rusty door handles, and a brass plate marked "Morgan, tailor," catch the eye. Note this shop on the right, where an old telegraph instrument lies cheek by jowl with a pair of boots, some rusty keys, and a brass telescope, and observe the stout lady sitting in the passage on a Windsor chair, her arms thrown back in extreme lassitude. She does not care for a passing customer, but you may examine her stock, and welcome, if you like, buy or not buy; and sometimes you will find a serviceable bit of apparatus, cheap and good.

We have several reasons for remembering this establishment. Our first introduction, many years ago, was over a bottle of yellow liquid exposed for sale on the tray. "How much for this?" was our query. "Oh, that, with the chloride of gold?—say 3s. 6d."; a very good estimate, we found, of its true value. But some time after we were more fortunate. A lens, four inches in diameter, attracted our attention. A careful examination showed it was an instrument of value, and although the name of the maker was crusted over with oxide, we subsequently made out "Ross" distinctly enough. It was a landscape lens of twenty-two inch focus, and altogether a promising bit of property. "How much?" was our query. "Ten shillings," was the reply. "Can't you take eight?" we said. "Off with it, then."

But bargains of this kind are few and far between, and our experience is certainly against the purchase of lenses from unknown sources. We do not claim to be infallible, but, without

drawing any hard and fast rule, we give our opinion for what it may be worth. Here it is: nine out of ten of the stray lenses you see are common French quarter-plate instruments, and should be valued as such. As a general rule, when the lacquer is bright and there are no signs of wear—say at the place where the cap fits—the lens is a “duffer.” A lens-hunter may occasionally espy an apparently good lens in uncle’s window, but in this case, as often as not, the lens turns out to be minus a glass, or a combination has been replaced by a watch-glass or a neatly-fitted disk of window-glass. We have even found the front combination replaced by the objective of an opera-glass.

In respect to “duffers,” it is singular how the name of “Shephard” has been taken in vain in their manufacture, while Dallmeyer, Ross, and Grubbe are by common consent left alone. A genuine Shephard, as everybody knows, is a capital instrument, and it is, of course, for this very reason that lenses made to sell and not to work are marked with the name. But it will be found—such is our teaching, at any rate—that while a genuine Shephard bears no number, and is marked “St. James’s Walk, Clerkenwell,” the “duffer” is distinguished in most cases by a number, together with the words “Shephard’s improved photographic lenses.” We know of several “duffers” at this moment, all new and bright, and shining in appearance, which we have come to regard as landmarks in London. One is in a window not far from New Cross, a second in the Borough, and a third in Drury Lane. A good second-hand lens generally shows unmistakable signs of wear, especially where the cap fits.

In the case of French makers, it is usual to sign in pencil on the edge of the front combination. Some have names engraved on the brass-work as well, but as many “shopticians” in this country prefer to have their own names on the French article, the instrument, like a toothbrush, is frequently marked to order. One can well imagine a novice ordering a lens from some West End “shoptician,” who assures the customer that the instrument shall be forthwith put in hand, and made especially; the lens when it comes home, bearing “Snookes and Co.” beautifully engraved upon the brass-work, while in pencil on the front lens is found the name of the real maker—Darlot.

At a pawnbroker’s in the Hampstead Road we once saw marked up, “Splendid lens by Breveté, price 30s.” It proved a fairly good one on examination.



*Shopman.*—"First-rate maker, sir; Breveté, sir—rare chance to get one of his lenses."

*Ourselves.*—"Can't say I have heard of him; but what (referring to the patent marks) are these letters, 'S. G. D. G.'?"

*Shopman.*—"Well, sir, you see that Breveté is a sort of foreigner, a Frenchman, and that very likely is some title; most Frenchman have titles or orders."

*Ourselves.*—"Cash won't run to this lens by Breveté; what can you do cheaper?"

Out came a drawer full of lenses in every possible condition—examples of lenses minus everything, from the pinion to the back flint. There was, however, a Dallmeyer 1B, glasses intact, but mount looking as if it had been in the silver bath a few times—bought for 7s. 6d.

Mistaking the name of the instrument, or its description, for that of the maker is not uncommon.

At the present time there is a double—or, as French term it, "twin"—opera glass ticketed up in the Strand, marked "by Jumelle," although the real name of the maker is on the glass.

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## THE OWNERSHIP OF THE NEGATIVE.

ALTHOUGH the question of ownership seems clear enough to the photographer, it is one, we fear, upon which we are still likely to have some controversy. Lawyers do not take the same decided view we entertain of the matter, and it is with the lawyers, we must remember, that the ultimate decision of such things always rests. After all, however, it is only upon facts the man of law gives judgment, and now-a-days photographers should be able to deduce evidence enough to secure them a verdict—at any rate, so far as ordinary portraiture negatives are concerned.

We ourselves have twice been consulted by lawyers recently on this subject of the ownership of the negative; and we are, moreover, glad to say that our arguments were deemed good and satisfactory. Whether they would have prevented litigation, if larger sums had been at stake, is another matter. One of our legal friends was very difficult of conviction, and he employed the well-worn argument about supplying a hundred address cards and an engraved plate for half-a-crown, in which case the

customer gets not only the prints, but the plate whence they are produced. Why, asked our friend, should not the photographer do the same?—why should he not give the negative as well as the prints he covenants to supply? The answer to this is not far to seek. In the first place, you cannot quote an instance of any photographer advertising that he will supply a negative and a certain number of prints for a fixed sum; and in the second place, he usually tells you the price of “further copies,” which is certainly an implied statement that he deems the negative his own property wherewith to produce further pictures.

But let us consider for a moment what sort of a bargain it is that the photographer makes. Two customers enter the reception room, and are shown certain specimens. Some are large, some are small, some are plain, some are vignetted. Either a price list is put into their hands, or the attendant quotes the terms. Mr. A. takes up a cabinet vignette and says he would like a portrait of himself like that, and he is told that he can have a dozen of them for two guineas. Mr. B. prefers a carbon enlargement; carbon, he hears, never fades, and he wants a picture to hang up in the library large enough to be seen from the other end of the room. The enlargement is valued at three guineas, and he agrees to pay that sum for a picture of himself, similar in every respect to the one exhibited.

The bargains thus concluded, each sitter is asked into the studio, certain negatives are taken, and Messrs. A. and B., having approved of the proofs, in due time receive their pictures. But Mr. A. is told by a friend, who dabbles in photography, that if A. will procure the negative, he shall have a lot of prints for nothing. Thereupon A. goes off to the photographer, and asks for his negative. But the photographer hesitates to comply; he asks what negative is it that A. requires. “The negative from which those prints of mine were struck; it is mine, since I paid you to take my portrait.” The photographer replies promptly that he has not taken one negative, but six, in order to get a satisfactory picture, and asks if the customer lays claim to all of them. “No,” says the customer, “but the portrait I paid for I want; it was necessary to take a negative, I know, in order to get the prints, and as you bargained to take my portrait, you ought to give it me.” But the photographer bargained to do nothing of the sort; he showed his specimens—what does he have specimens for, if not for the purpose of

exhibiting them as samples ?—and promised to give pictures like them in return for a certain sum of money. If the customer had selected by chance ferrotypes, there would have been no negative to have, and indeed a photographer, so long as he produces results according to sample, is under no obligation to proceed by this process or by that. So long as he carries out the terms of his agreement to the letter, he has done all required of him by law.

But Mr. B.'s case more tritely shows to what a pitch of absurdity matters may go if it is once conceded that the negative, or cliché, belongs to the customer, and not to the photographer. Mr. B. has bargained to give three guineas for a large picture in carbon, and he is likewise informed by a friend that the negative once obtained, any number of prints are to be produced at a nominal price. Here the photographer meets his customer's demand rather warmly, for if anything belongs to B., it is not a single piece of glass, but the original small negative, the positive transparency, and the enlarged negative. If B. is entitled to the last, it is equally certain he is entitled to the first and second as well. The photographer would be bound to give up all three clichés—or more, if more had been employed to get the finished result—if the customer had a legal claim on the negative; nay, if we go so far, it would be hard to say where the claims of the customer stop; the camera, the enlarging frame, the developing dishes, &c., &c., being all necessary for the finished result, would likewise be liable to be claimed; just in the same way as if A. had liked his portrait so much, that he ordered 5,000 to be printed off by Woodburytype, to illustrate his new work on *Typical Developments*, and laid claim to all the transparencies and metal blocks from which they are printed.

But, on the other hand, is it quite clear that the portrait negative belongs to the photographer? He cannot do what he likes with it, can he? May he print and sell copies without begging permission of the customer, if the latter has nothing to do with the negative? We answer, as a matter of course, that the negative, consisting of a film of silver upon glass, is most certainly the property of the photographer; not only this, but he does not hesitate to appropriate them. By far the greater number of negatives taken are re-used by him, the glass cleaned for further employment, the film thrown into the residue tub with other silver waste. It is only selected negatives that are care-



fully put away, serving for the production of further prints should the customer honour the photographer hereafter with future orders. The "permission" of the customer has nothing to do with the ownership of the negative at all, but refers to another matter altogether, that of copyright, which justly forbids photographers selling portraits of personages without first securing the consent of the latter. All persons have a copyright in photographs of themselves, but they have no more right to the film upon which their features are impressed, than they have to the lens and camera that help to impress them.

Whether photographers put the negative into a rack, or into the stripping trough, does not concern the public one jot; while, if the customer really had a claim upon the negative, he could sue the photographer for destroying it. The photographer preserves his negative quite on his own account; he hopes at some future time to get a further order for prints, from some proportion of his negatives, at any rate, and so goes to the expense of racking and registering the best of them. They are of no value to him whatever, except as dusty old glass, if the customers never come again; for, as we have said, even if they are of notable personages, he must not print copies without consent. But as the photographer has a better place for the preservation of negatives, knows best how to take care of them and to register them, he really does his customers a service in preserving their portraits.

We do not wish it to be inferred that negatives always belong to the photographer under any circumstances; that is nonsense. If at any time a gentleman or lady desires to possess a negative of this object or that—nay, if they were to enter any studio to-morrow, and were to prefer a request for a portrait negative—there would not be the least hesitation in complying with their wishes. Our object has been to show that under ordinary circumstances, where the bargain is to deliver a certain number of pictures, be they portraits, landscapes, or reproductions, the bargain is complete as soon as the photographer has handed over the specified prints of the required nature.

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### A PHOTOGRAPHIC MUSEUM.

A MUSEUM of photography is about to be formed in Paris, connected with the Conservatoire of *Arts et Metiers*. All objects

having historical value, whether in connection with Niepotype, Daguerreotype, Talbotype, or Collodiotype—to coin a word that historians will want—are eagerly sought for, and no efforts will be spared to make the collection as complete as possible. Even the present gelatine process will not be forgotten. It is not likely, however, that the possessors of photographic relics in this country, much as they may desire to see the formation of a photographic museum, will be willing to send over to France their own cherished belongings, more especially as Britain can claim its full share in the discovery of the art as it is now practised; and for this reason we hope that the day is not far distant when endeavours to a similar end may be made on this side of the Channel. We cannot claim Nicephore Niepce and Daguerre as countrymen, but Wedgewood and Davy, Talbot, Herschel, Ponton, Reade, and Archer, to mention half-a-dozen names that readily occur to the English-speaking student of photography, suffice to show that the discovery of photography is one in which all true-born Britons must feel an interest.

Indeed, we fully believe that in this country are to be found the materials for making a more complete historical collection than in any other. To begin with Niepotype—for until the camera came into play, photography had little significance—it is highly probable that some of the best specimens are scattered about Great Britain, if they could only be brought together. It was in 1823 that Niepce succeeded in discovering a method of producing permanent photographs by means of bitumen of Judea, although, it is true, mention is made in his writings of the material in 1820. He coated a metal plate with the bitumen, and after exposure to light, developed it with so-called animal oil of dippel. He took some of his specimens to Paris in 1825—for we have evidence that they were shown to Chevalier in that year—and brought others to England in 1827, when he came to this country to visit a sick brother. We may infer, indeed, that he brought a very large number of pictures with him, for he submitted his process to the Royal Society, and made several attempts to sell it. Moreover, he worked with the camera here, taking a picture of Kew Church, which has since become historical. This must have been done in 1827 or 1828, for he departed in the latter year. The Niepotypes, their discoverer exhibited to all the notables in London, at the Royal Institution, and at the Royal Society. Some were left in the possession

of Mr. Bauer, the Secretary of the Royal Society, and it is but the other day that Mr. Robert Hunt assured us he was confident they still formed part of some collection in this country. Faraday saw the picture of Kew Church at the time of Niepce's visit to England, for years afterwards, when the latter was dead, and the first Daguerreotype was placed in the English philosopher's hand, he recalled the circumstance. "You have never seen anything like that before, I am sure," said Mr. Bauer, as he handed Daguerre's picture to Faraday. But, to the Secretary's astonishment, Faraday replied, "Yes, I have; I saw a picture of Kew Church very much like it. A Frenchman showed it me, and he said the light did it."

Among others, Mr. Ellis, of Balcome, possesses a specimen of Niepcotype; but, strange to say, there are none at the British Museum, where we ourselves have made search. The Royal Society may have some Niepcotypes among their archives—those left with Mr. Bauer—but of this we are not sure.

Of early cameras there are many examples in existence, but then the *camera obscura* and *camera lucida* were well-known objects in the last century. Lenses are of more recent construction, for although many fine objectives were made prior to the days of photography, it is only within the last thirty years that the more perfect camera instruments were made. In the early lenses there was no reason for caring for the actinic focus at all, nor was there any purpose to be gained in securing flat field or depth of focus; only when photographers called for these improvements were they forthcoming.

Very early Daguerreotypes—to make the next step—are by no means prolific. Of portraits of Daguerre himself there were, we believe, only three extant prior to the publication of the YEAR-BOOK OF PHOTOGRAPHY for 1881. But a fine collection of Daguerreotypes could be made without difficulty, especially if the houses of Claudet, Mayall, and Beard could be induced to contribute.

In the same way the Talbotype process might be most effectively illustrated, for well-preserved negatives are in the hands of many early students of photography. At Lacock Abbey there is a large collection of relics connected with the early experiments with photogenic drawing, as it was at first called. The creation of a negative, and the printing therefrom of positives—the photographic process in general use at the present day—we



have from Fox Talbot, and Fox Talbot alone; all earlier attempts of multiplying light-pictures by Niepce and Daguerre were by surface printing or helio-engraving. Some of Fox Talbot's first negatives would therefore be of high interest, since they form the keystone of the photography of to-day.

Sir John Herschel's share in the discovery of photography could not be so well recorded in a museum, albeit his introduction of hyposulphite of soda as a solvent of the haloid salt, his investigations into the iron and gold salts, and his suggestion to employ glass for photographic negatives, are among the most useful and important contributions to photographic history that can be chronicled. In the same way Mungo Ponton's discovery anent the action of light upon the bichromates is one that a museum could do little justice to, save by exhibiting examples of the reaction in question. The Rev. Mr. Reade's discovery of the properties of gallic acid for development might, on the other hand, we believe, be adequately represented, for, if we mistake not, one of his original results is still in the possession of Dr. Diamond. The bath employed by Archer in his first collodion experiment, we had in our hands the other day, for it is the property of Mr. H. P. Robinson, of Tunbridge Wells.

Unfortunately, there is a good deal of apathy on the part of our existing museums to make a collection of this kind. To induce the authorities of the British or South Kensington Museums to purchase objects of value, it is necessary to bring influence to bear. Many thousand of pounds are annually expended in the acquisition of mementoes and objects of interest, but the purchase is generally a matter of favour as much as anything else. Some time ago Madame Niepce de St. Victor brought to England a valuable collection of photographs in colour, a series produced by Niepce de St. Victor, who shares with Becquerel the honour of having more nearly solved the problem than any other experimenter. The pictures in question were photographs, taken in the camera, of dolls dressed in coloured raiment, produced by means of the so-called violet sub-chloride of silver after prolonged exposure. The pictures were then seven years old, and although only capable of exhibition by candle or subdued daylight, they represented the most interesting results yet produced in this branch of photography. But none of the museums of this country would purchase a specimen, albeit Madame Niepce de St. Victor would gladly have parted

with them for a reasonable sum ; it is now questionable whether the British Government could acquire any of them for love or money.

In the formation of a museum of this kind, it is absolutely necessary, as we said in connection with a national photographic gallery, that time should not be lost. Objects which now might be had for the asking, it will be impossible to beg, borrow, or steal a few years hence. Old apparatus, proofs, and pictures lying by and forgotten, are easily lost sight of. They come into the possession of those who know not their value, or take little interest in their history. They are often treated as lumber and rubbish, until too late for recovery. We do not know whether it is within the power of the Photographic Society of Great Britain to make a collection of photographic mementoes ; but if it is, that body, if it but commenced the work, would earn the gratitude of many photographers who take something more than a material interest in their art.

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### BUSINESS TACT.

SOME twenty years ago London was visited in rotation by several troupes of so-called negro melodists. For the greater part of the year they were in the provinces, but each in turn came to town for a time, occupying a well-known hall in Piccadilly. One of these troupes was owned by Messrs. A., B., and C. Mr. A. was the Acting Manager—that is to say, the business man, who made all arrangements, looked sharply after the money matters, and did all the clever advertising and billing ; Mr. B. was the Bones, and a very comic Bones too ; while Mr. C., a Cornerman, was likewise a most amusing performer. When the troupe of Messrs. A. B. and C. came to town, A thought to himself it would be a capital notion to cease touring altogether, and to take a long lease of the Piccadilly Hall ; in this way he could keep out other troupes, and his own minstrels get London all to themselves. He discussed the project with B. and C., and, after some days' chit-chat together, these two consented. "While we are about making a change, though," said Bones, "we propose going a bit further, my dear A. I have been talking over the matter with C., and he quite agrees with me, that as you don't

black your face and don't perform, you are scarcely entitled to so large a share of the profits. Now we think, that instead of sharing as before, if we allow you three hundred a year, as secretary, you ought to be satisfied." A. reserved his decision, but a day or two after told his partners he was content; henceforth he would be satisfied to receive the fixed salary mentioned. "But just one word," added A.; "where are you fellows going when you leave Piccadilly?" B. and C. thought that they had not rightly understood. "Leave Piccadilly!" they exclaimed loudly; "why, don't you remember what we decided upon? We are not going to leave Piccadilly." Replied A., coolly, "Oh! yes, you are; I have taken a lease of this hall in my own name, and I have a troupe of my own coming here next month. I mean to make a pot of money out of the show, I can tell you. I can get any number of minstrels who will black their faces and sing comic songs for thirty shillings a week. All that is wanted is good management, and I can do that. But I will still be your secretary all the same, if you like. Where are you going?" Need it be said that Messrs. B. and C. were only too ready to go back to their original bargain? And how wise A.'s suggestion was that they should "never perform out of London" is proved by the princely income which for years past has come into the coffers of the troupe. Poor C. did not live long to enjoy prosperity, but that say the diamond brooch Bones now wears in his bosom of an evening is worth five thousand pounds.

This is a good example of what may be done by business tact. The best painting in the world, the most touching poem, the finest play, the most delightful entertainment will never bring its author due reward unless it is properly put before the public. Unfortunately, clever men are apt to underrate business qualities, and this it is, more often than anything else, that lies in the way of their advancement. They see the works of second-rate men put before their own—work admittedly inferior—and they grow disgusted at the cruel neglect and non-appreciation of the public. But in nine cases out of ten they are neglected because the public never hears of them.

Take the example of two photographers in a provincial town. We will say they are equally competent to turn out good work, but one flourishes while the other does not. Yet their charges may be identical. But A. has secured a bright window in the High Street, and fits it out, if not with exquisite taste, at any



rate attractively. (MM. Benque et Cie. owe their high standing in Paris in a measure to the fact that they have in the Rue Royale a gallery of popular portraits, together with a big group photograph representing a scene from the play which happens at the moment to be the most popular). A.'s pictures are bright and new, the frames are elegant, and there is a frequent change. A picture from New York or from Vienna exemplifying a new *format* is seen occasionally, and there are for ever new methods of printing, mounting, and glazing to be seen. A., in a word, impresses the townspeople with the idea that he is before rather than behind the age, while B., perhaps, shows the same old specimens in the same old shop front for ten years together, and is heard to speak of "leather and prunella" in disparaging tones.

The way in which business is conducted indoors may also be as widely different. Here the great aim must ever be to get the confidence of the customer. Too much attention is often worse than too little; as everybody who enters a shop knows, to be obsequious is as bad as being too off-hand. A customer inclined to be obstinate, only becomes more obdurate still if he finds himself importuned. On the other hand, he may be willing to purchase, if he is but asked. It is here that business tact is valuable, and none more so than that tending to infuse a spirit of confidence into the stranger when he enters. Let him have a card of terms at once, so that he may see that the prices are fixed. Let him have time to wander round unattended to look at specimens, so that he may alter his mind if he chooses, and fix, mayhap, upon some style of which previously he was ignorant. Every minute by himself increases his confidence, and then he may be spoken to in a much more chatty and satisfactory manner than before.

If a stranger "knows all about photography, don't you know?" when he enters, he should be received with deference. The chances are he means well, and will give a handsome order if treated judiciously. Receive information rather than offer it, and show an earnest disposition to agree with him, and to let him have his own way; whether he has it ultimately is another thing. But, at any rate, such customers—they are very frequent and trying now-a-days—should never be thwarted, for they are easily put out of temper.

Of course, hints like these only refer to establishments which

have to make their way. A firm of standing, when it has earned a reputation, can do as it pleases. It can conduct business with a high and mighty hand, and the more independent it is with its customers, the more likely are these to flock around; but this, after all, is only another display of business tact. At Drury Lane Theatre, some years ago, at pantomime time, money was curtly refused at the box-office when people came to book seats, not because all the places were sold for that particular night, but so that people should be sent away empty-handed, or compelled to book seats weeks in advance. The report that Drury Lane was full, was, naturally enough, a capital advertisement. For aught we know, some of our fashionable West End studios may do the same with their sitters—refuse appointments altogether, or postpone them for a fortnight or three weeks.

One business feature the photographer should never forget—that of publishing, if it is only a portrait here and there. We have already insisted upon the value of this plan of making one's name known; every shopkeeper who sells your picture, and every purchaser who buys it for his album, advertises your studio. It is rare indeed that even the most homely photographer in our quiet little towns and villages does not get his chance to publish a portrait, and if he has business tact, he never allows the opportunity to slip. The squire's slip of a son may develop into a hero at any moment, the village doctor may become one day the celebrated physician, the daughter of the agent—George Elliott, was no other—shine forth unexpectedly as the brightest stars in the literary firmament. Many people secure permission to photograph great men or women; but few have business tact enough to make proper use of the advantage. Studios in London, and the provinces—those at the West End and fashionable watering places especially—are often regarded as galleries and lounges in which idle visitors spend a good deal of time, and if attractive pictures are displayed, it is natural enough that business is done. People like to look upon the features of this lion or that, and the portrait of anyone who has made a noise in one way or another commands a sale.

So that while it is very necessary to know how to produce a good photograph, it is quite as important to know how to sell it. It is not derogatory to be a good business man; we have only to regard the successful poet, the successful painter, the successful novelist or dramatist, and to ask what he charges for his works,

to find that, thorough artist as he is, he is none the less a keen man of business. Unless he had been, he would never have attained the pinnacle of fame—at any rate, not in his lifetime. By all means let us do all we can to advance the art and technics of photography, so as to secure pictures as perfect as possible; but no one is less an artist because he looks after his bread and cheese at the same time. Bear in mind that to be successful, an aptitude for business is all important: don't forget the acting-manager.

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### ON TRIPODS.

It is because we have no intention of speaking about camera stands in the studio, but only of those out of doors, that we have placed the heading "Tripods" above this article. In the studio, it is rare indeed to find the tripod employed at all as a stand; popular favour now-a-days runs in the direction of a heavy solid stand that moves slowly and smoothly upon castors or small wheels. Some photographers have iron castings to work upon, and others a massive structure of teak or mahogany; in any case, the stands used are generally very different to those employed in the field.

The landscape photographer, whether he be professional or amateur, whether he is securing pictures with a view to profit, or to his own gratification, is always actuated by the same motive—to get the best return for his trouble. It is true, the professional photographer usually carries a heavier equipment with him, and has more time to spend over his work; but still, like everybody else, he wants to get through his labours with the least trouble, and to make the best use of his time, and, as in the case of his brother, the tripod has much to do with the success of his work.

We have travelled with a camera in various countries, and with various kinds of tripods. We have employed high stand, low stand, no stand. We do not say our experiences have solved the difficulty, but they have made us closely acquainted with it, and an obstacle well met is half surmounted. It is one thing to know what one wants, and another to get it; at the same time, to be thoroughly cognizant of the end to be attained is a step in the right direction.

A tripod should place the camera on a level with the eye



There are very few tripods that do this; as a rule, the eye has to be lowered considerably in order to focus. Only those who have repeatedly carried a camera out of doors know the value of this dictum. You are walking along by hill or dale in search of pictures for the camera. Suddenly, at the turn of the road, a perfect little gem presents itself. There are some craggy boulders, and a cluster of thistles by the roadside, that will make an admirable foreground to the quaint homestead beyond, a brown thatched farm with many-gabled roof and red brick windows of Queen Elizabeth's time, that stands at the foot of a grassy slope. Some spreading oak trees are on the right, and beyond, towards the left of the picture, is the soft outline of a range of blue hills. But when you have fixed the camera on the tripod, and stoop down to focus, behold! half the beauty of the scene has disappeared. You are too low, you find, so you climb the bank by the side of the road, and focus again. Confound it! the foreground has now gone, and you have to bring down the whole of your machinery once more. There are some more boulders further on, and a clump of brambles, which will make even a better foreground. "Come on!" you cry to your patient companion, and between you the apparatus is once more set up for work. But this time it is worse still; the lichen-grown porch of the farm is hidden to view, and you cannot see that fantastic roof so well, which first caught your eye. It is no longer the charming picture you first sighted.

What is to be done? At first you argue that there must be at least a dozen points that are suitable; so you walk up the road and down the road, only, however, to come to one conclusion, that the point whence you first sighted the farm is by far the most appropriate.

It will sometimes happen, if you have not marked the place, that you are unable to find this identical spot again, and, after half-an-hour's delay, will give up the scene in disgust; and all because you could not get your lens to see exactly what you saw. It is surprising, indeed, how very rarely—even if you can place your camera where you like—you are able to improve upon the view that first takes your fancy; and this, indeed, is only natural, because, of course, you do not halt until the impression created upon you is a very marked one.

Being but ordinary human beings, and endowed only with one pair of orbits at a fixed height from the ground, it is possible,

of course, only for us to see pictures at that height, unless, indeed, we choose to walk about half doubled up. And yet this is what we should do, in order the better to look out for camera pictures, if provided only with a tripod that raises the camera but four feet or so from the ground. It is surprising what a difference a few inches make, and the difference is not to be compensated for by employing a swing-back, throwing the lens out of the centre, or any one of the devices which ingenious camera-makers furnish us with.

It is only the photographer who has made excursions from home who can fully appreciate what we say on this head; in many cases it is possible, we are ready to admit, to set up the camera tolerably well elsewhere, and even to make a good picture of the object from a point much below the eye; but it is work that never gives entire satisfaction, since you have not had your own way in taking the photograph. You have not secured that picture which caused you to come to a full stop; you have not done full justice to your subject.

We have said that we have travelled with various tripods, and if you cannot take one with you that will place the camera pretty well on a level with the eye, our advice is to choose a low and steady one. Vibration, as everybody knows, is the bane of every tripod, and unless the latter is exceptionally well constructed, this defect, obviously, is greater in a high stand than a low one. No stand at all we once travelled with in the Tyrol—after a fit of disgust over a certain alpen-stock tripod that turned out an utter fraud—but this experiment, we are bound to admit, was unsuccessful. So much time was lost in seeking a support, that the operation of photographing became a most uncertain business, and it not unfrequently ended by employing the moss-grown boulder or quaint stone wall we had chosen for foreground as the pedestal for the camera. But a pigmy stand we constructed from an artist's tripod stool was by no means a failure, for we usually found a heap of stones, a bank, or other convenient resting-place for it. The camera was always steady, and this is more than we can say of any other stand it has been our lot to carry.

We have never been able to adapt the mountain pole so successfully to the tripod. On one occasion we employed a pole split in three, which for mountaineering had a brass point or cap to receive the three iron feet, and a brass band in the centre,

keeping the legs firmly together. This was a very good tripod, quite high enough, tolerably steady, and well adapted to glacier work and slippery places. In a word, it was a good tripod, but a bad alpen-stock. We took it with us over the Roseg glacier in an attempt to scale the Piz Roseg in the Engadine, but found it too heavy and too blunt for glacier work. Another time, there being three travellers in the party, we essayed to use all three poles in a photographic tripod. The poles were made in England with a view to this, and a proper metal union was constructed for the yoking of the poles together. In this case, too, a tolerably satisfactory tripod was forthcoming (although the legs should have been tethered below to prevent their slipping); but in the first place, the metal union was a very heavy bit of apparatus to carry; and, in the second place, it was rather irksome to the travellers to be called together, and to remain idle every time the photographer of the party wanted to take a picture. On this occasion we crossed the Scandinavians with a camera, and on the second day the heavy metal union was cast away, its place being taken by an improvised bracket of tin, made from the lid of a Huntley and Palmer's biscuit tin, the tin itself being employed in lieu of a cauldron for soup-making.

The last tripod we have experimented with is one recently described in these columns—a cane containing two metal tubes, one within the other. It would be possible to get this stand of greater height, no doubt, but ours stands when set up but three feet. It is, however, a tolerably sturdy stand, if there is no wind, taking its compactness into consideration, for the metal tubes are comparatively heavy, and present little surface to the wind. The stand, indeed, acts as ballast to the light camera surmounting it, and makes the apparatus steadier than it would be. If only the ball and socket joint were larger—so as to steady the camera—it might be well recommended. A mountaineer's pole thus constructed would be a little heavy, but might be trusted to bear weight.

Mr. William England, who has had more experience, probably, than anybody else in the matter of photographic journies, has for the past fourteen years used only one tripod, a high bamboo one. So that it should not be unwieldy, each leg consists of two joints, which are put together like a fishing-rod; in fact, Mr. England calls them fishing-rod joints. Fastened together, these six lengths of bamboo look like fishing tackle, and



Mr. England is more often taken for an angler than a photographer. The tripod, for strength and lightness, is unrivalled, and as Mr. England has a principle never to photograph in a wind, the stand is always steady enough for his purpose. Mr. England, we may mention, makes it a rule to employ a very broad base-board, and he believes many shakey cameras might be cured of their defect by adopting this expedient. Many photographers employ dependent weights to their tripods, but Mr. England never does so.

Mr. England goes nearer towards solving the difficulty to which we alluded at the beginning of this article; namely, to obtain a tripod of proper height for the travelling photographer, which shall be portable and steady; but if a stand nearly as high as one's eye is not to be had, or not to be trusted, then steadiness alone is the point to which the photographer's attention should be directed in choosing a tripod.

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### ABOUT PHOTO-LITHOGRAPHY.

THE whole process of photo-lithography bids fair to be revolutionised by the introduction of the velvet roller, an innovation we owe to the Austrian Geographical Institute of Vienna. Several establishments, both private and Government undertakings, have already adopted the new form of roller, as Major Waterhouse, B.S.C., the Deputy-Surveyor-General of India, was so pleased with its working, that he suggested some experiments with rollers made up with other similar materials. Of these experiments, as also of the velvet roller in general, it is our intention to say a few words.

But, first of all, on the subject of photo-lithography generally, we must utter a word of warning. Only those who are competent lithographers can succeed in photo-lithography. And, indeed, this is only to be expected. Lithography is of itself a delicate art, and photo-lithography is more delicate still. A lithographer has already much to learn when he begins, so that he who knows nothing of that art had best leave photo-lithography alone. Only when he has a competent lithographer to assist him should the photographer engage in the art of photo-lithography.

But in these circumstances he will find that with the assistance of the velvet roller he will rapidly go ahead. The treatment of the sensitized paper we need not here describe in detail, since the reader cannot do better than refer to Mr. Butter's paper on the subject published in the *PHOTOGRAPHIC NEWS* of March 19, 1880. Suffice it to say that the paper chosen must be good bank-post, without any ribs—since ribbed paper is not smooth and tough—and that there must be no alum put into the bichromated gelatine bath upon which this paper is floated. Alum makes the surface hard, and with the velvet roller this may be as delicate as possible without sustaining injury.

We will suppose the bank-post paper floated upon the bichromated gelatine, and dried. It is put under a line negative—nothing is better for intensifying than the lead formula of Eder and Toth—and printed. The lines of the design can be seen upon the yellow print if you look for them, and they become yet more visible when the impression is put into cold water. It remains immersed for four or five minutes, and is then laid carefully and flat upon a glass plate, which must be a little shorter than the print. Excess of moisture is removed by means of blotting-paper, and the print is now carried off to the lithographic room.

The photographer puts the print down in front of him, upon a press or other convenient position for rolling. A stone slab about the size of the glass plate is convenient for resting the print on. The edge of the print nearest him he tucks under the glass plate; the end away from him is loose, so that when it comes to the rolling, by always rolling away from him, he presses the print down, while it yet has a tendency to flatten out and not cockle. Drawing back the roller under these circumstances would, of course, be fatal.

The velvet roller charged with ink is taken in hand and lightly passed over the print. The rolling is only done one way—away from the printer, as we have explained. The roller is but half the weight of an ordinary litho-roller, and no pressure—or scarcely any—is exerted by the printer. It is hardly like inking a lithographic surface. The moisture over the surface of the impression repels the ink, it is true, but the lines of the drawing or design stand up so prominently that they remind one almost of relief printing. The delicacy of the lines as they gradually take up the black ink reminds one of bank-note

engraving, they are so exquisitely sharp and fine, and the lithographer who for the first time undertakes the work is fairly charmed with its beauty. He scarcely knows how he has produced such exquisite work.

There must not be too much ink applied to the print, for the simple reason that this will subsequently be pressed out of shape by the lithographic press, and then the lines get blurred and ragged. A skilful photo-lithographer requires to pass the velvet roller but half-a-dozen times over a gelatine impression—supposing this has been properly exposed—to produce a perfect print or transfer.

The ink used has been transfer ink, so that nothing now remains but to go on with the lithographic work. A polished litho-stone is warmed, the inked-up print is laid face downwards upon it, and then passed through the press. The result is, of course, that the inked impression is transferred to stone, and thence, of course, any number of impressions may be pulled in the ordinary fashion.

To come back to the velvet roller. It needs very careful construction, if it is to answer well. In the first place, it must be light. Velvet stretched and sewn like leather over an ordinary wooden roller will not answer. There must be either less wood, or the velvet, as Major Waterhouse prefers, may be fitted to a tin stock. In any case, the roller should not be more than half the ordinary weight. Nor must the velvet be sewn in the usual way with a double thickness at the join, but carefully drawn together with stitches. If there is a join, then the roller fails to grip at this part, and the print at this spot not only lacks ink, but is frequently unclean.

Next to lightness, the roller should be of soft consistence, or “pudding,” to use an expressive phrase of a photo-lithographer friend. To ensure this, there should be a flannel under cover, no less than three rolls of thick flannel, or so-called collar-cloth, being put round the wood or tin stock. The velvet itself soon becomes incorporated in the “pudding” mass, and especially if it happens to be cotton velvet or velveteen. And here we may mention that the result of experiments with Major Waterhouse’s three rollers was the effect that their value is in the following order, viz:—

1. Cotton Velvet.
2. Silk Velvet.
3. Moleskin.



A "pudding" nature and "pulling power," when rolling, are requirements of the velvet roller, and these are best secured by cotton velvet with the underfolds we have specified. The gelatine impression, during the rolling, is treated precisely as a lithographic stone, and may be wetted with sponge or rag, as occasion requires.

Of course it is impossible to *scrape* the ink from a velvet roller. The best way to preserve the roller is to put it into a bag after use, without any further manipulation whatever; then, before beginning work again, free the roller from the old ink by rolling it on a clean slab, cleaning the slab at intervals with turpentine of the old ink. The velvet roller should always be cleaned in this way before using.

There is one more important point, and that is, the mixing of the transfer ink for application to the slab and to the roller. So that these instructions may be as practical as possible, we append here the directions of a practical photo-lithographer on the subject:—

Take two ounces of transfer ink from the pot, add  $\frac{1}{4}$ -ounce of olive oil, mix well together with a muller on slab; this you will find gives a paste about the consistency of butter. Such paste makes capital stock. When the printer is ready to roll up the transfer, reduce the above with turpentine to about the thickness of cream; you will now find your ink is ready for the roller. Charge the roller liberally, and roll the roller well up on the slab. In so doing, you will find the turpentine evaporate, leaving the ink in beautiful condition for a first-class transfer.

Should you find your ink get too stiff, reduce it with turpentine; be sure you roll your transfer one way only—namely, from you.

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## ABOUT PUBLISHING AND SELLING CHRISTMAS CARDS, BIRTHDAY CARDS, ETC.

GRADUALLY, but surely, the photographer is gaining ground, and insisting upon a share in the good things that are periodically dispensed by that most generous of patrons—the general public. The competition in producing tasteful and fanciful productions in the way of designs and pictures was confined, not long ago, to

an annual display of valentines, the valentines in question being, as a rule, made up of laced paper and floral studies. *Nous avons changés tout cela*, and now, in place of a single day in the year, we have Christmas Day, New Year's Day, Easter, and St. Valentine's observed by people in general, and birthdays by everybody in particular. Moreover, paper lace and gaudy flowers no longer suffice for valentines any more than do the cock-robin and snow-pressed roof suffice for Christmas Day. This is an age of progress with Christmas and birthday cards, as with everything else; and as soon as there is a cessation to progress in this particular phase or craze, the end of it will not be far off; that is to say, if shopkeepers to-day could put before their customers nothing better in the shape of valentines and fancy cards than the fragile perforated paper productions of twenty or thirty years ago, there would cease to be a public to buy them.

Photography, as we have said, has stepped in with novelty, or, indeed, something better than novelty, and, what is more, the public has declared itself very favourable to our art in this particular connection. We might enlarge upon the opportunity, and point out that there is one other indication that photography is growing into a fine art, since it is elbowing its way to the front among the little fine art productions that so often adorn festive cards, the public having recognised the fact in an unmistakable manner by readily purchasing photographic productions. In these latter there are not only beauty and grace, but there are life and truth besides, conferring an ineffable charm upon the tiny pictures. All photographers of standing—they are not numerous, it is true, just now—who have occupied themselves with this particular branch of the art, have simply “sold out” all they have produced, and in some cases are quite unable to respond to the call for more than has been made upon them. The pictures these gentlemen have sent to market are so vastly superior in the art of pleasing than are the cards produced by painter and draughtsman, that while the former are in great demand, the latter are a drug in the market.

There is, then, indication that in future photographic cards will play a very important part, and for this reason we have made it our business to learn something about them in the trade, and the way in which such cards are bought and sold. We have paid several visits to retail traders, and have also acquired some knowledge of wholesale dealings, so as to place before our

readers a little information on the subject. But first, just a word to those who are contemplating making their fortunes in the matter. The public, though a generous patron, is a very knowing one; it will not buy rubbish. The art quality of a "card" stands high at the present day, and every year it mounts still higher. A production that readily sold last year, may not sell this, and this year's cards are likely to be beaten by those that come next Christmas. Again, not only must the little photographs be fine, clear, and pretty, but they must, like jewels, have a tasteful setting. The mounting, framing, and disposition of the photograph is as important as the photograph itself, and the success which has attended the sale of photographic cards has been due to the fact that they have been put before the public in a tasteful manner.

The usual price to the public of a nice card is one shilling, and that is the sum for which most of the photographic cards are sold. But the producer does not get half this amount, and here there is stumbling-block No. 2 in the way of one who proposes to get no more than twopence-halfpenny for a card that sells at a shilling. This is due in a great measure to the original valentine trade, for the stock was of such a fragile nature, and its demand so circumscribed, that dealers refused to buy at all unless they saw their way to a large profit. This was only fair, no doubt, for stale unsold valentines of paper lace must be a drug in the market, indeed. But with cards whose intrinsic value is higher, and which are available for different seasons, or for birthdays, the matter is different, since the dealer has more chance of effecting a sale; yet, as we have said, he enjoys the same benefits as he did when nothing was brought him but old-fashioned valentines.

But it is not only the dealer who demands a large profit. There is the wholesale firm who must also be paid. We have said that, generally speaking, two-and-sixpence or three shillings a dozen is paid to the producer. Now into whose pockets does the difference between three shillings and twelve shillings go? Well, in the first place, there is such a thing as the public itself demanding discount, and it is not unusual, when large purchases are made, to ask for an abatement of twopence in the shilling. This, however, is not at all general, and when it does prevail there is still a large balance to be accounted for. The photographer or producer may, if he is careful, get a penny profit on



every card he sells, but he certainly never gets any more. The wholesale firm, on the other hand, who buys of him, wants much more, and so does the retailer. The former, on a shilling card, not unfrequently makes threepence, and the latter fourpence or even fivepence. But then, in fairness to the former, it must be remembered that he has to pay heavy commissions and expenses to travellers, &c., while the retailer has also a handsome shop to pay for, and runs the risk of having much of his stock unsold.

We took in our hands the other day two cards, one being a painted miniature photograph upon opal gelatine, and the other a tiny vignette on a dainty cream mount with gilt border, and these cards we laid before a respectable dealer in a provincial town. Would he buy such things, we asked, and what price would be given for them? His answer was—for the plain vignettes he would have no difficulty in getting a shilling a-piece, and they would be worth, therefore, eight shillings a-dozen to him; for the other he could demand two shillings, and for that reason would offer sixteen shillings a dozen. Here, at first sight, seemed to be an explanation of the whole matter, viz., that the wholesale firm benefited by far the most; but a further explanation put matters in another light. The sums the shop-keeper named as being willing to give were subjected to a discount of twenty per cent.; nay, if he paid cash down at once, it sometimes happened he could get as much as twenty-five per cent., which latter would reduce the eight shillings to a matter of six. He, the retailer, would thus make fourpence profit on every card sold, supposing he gave a discount of twopence in the shilling, or sixpence if he did not. In the latter circumstance, if he sold three-quarters of his stock, he would do good business.

Is it possible for the photographer to do without the wholesale firm? Yes; but this is what he must do. He must be his own "traveller," and "travelling"—to get a man to part with his money—is an art. Secondly, he must have a large choice of goods; wholesale firms give retailers not a choice of a dozen or two dozen pictures, but of two or three hundred, so that if only a score of cards are selected, these may be of all sorts and sizes. Thirdly, he must be early in the field, and if he has a novelty, be able to flood the market with that novelty before others have time to imitate it. In a word, he must be a *man of business* as well as an artist, if he wants to put in a claim for business profits. As to being early in the market, it may interest

our readers to know that only those who make their arrangements in the spring and early summer can hope to find a market for Christmas goods; the retailers have given their orders, and sometimes parted with their money, before autumn comes.

Still there are exceptions to every rule, and any firm of photographers who can produce a real novelty, at once attractive and taking with the public, should have no difficulty in placing it anywhere and at any time. Only, they must remember that if they cannot flood the market at once, they will be beaten with their own weapons; and that unless the productions represent, beyond all doubt, work of very high quality, few shopkeepers will be found to make a *second* disbursement after having made their regular purchases for the season.

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### ON FINISHING CARTE PORTRAITS.

It is not only on the subject of finishing carte portraits that we are going to speak, although we have just said as much; but on the finishing of all kinds of portraits of small size, whether they are called cartes, cabinets, promenades, mignons, boudoirs, makarts, &c., &c. The fact that we have now so many different sizes shows plainly enough the effort made on all sides to import novelty, *chic*, fashion, or other attractive quality to their wares, and if only this indispensable item to a prosperous portrait business were more thoroughly understood or recognized, it would be well indeed for photographers in general. By all means let our young photographers—and old ones, too, for that matter—study and practise the principles of art, for only under these circumstances can they win a name for themselves, and secure for photography a place among the fine arts. But there is a difference, we contend, between the small portrait that is issued by dozens, and the study or *genre* photograph of larger dimensions. The small portrait should possess art qualities, but in the nature of things it should possess something else too; and it is this something which, on the one hand, many photographers hold to be beneath their notice, and others do not sufficiently understand.

In the carte—by which we mean all other small portraits as well, that are issued by the dozen or half-dozen—it is not suffi-

cient to have a graceful pose, a well-lit face, vigorous contrast, and soft, harmonious colouring. All these proclaim the artist, and these, if present in perfection, may sell the picture, of course, no matter how slovenly it is mounted, how devoid of neatness and elegance may be the surroundings. Unfortunately, ninety-nine photographers out of a hundred do not produce—they cannot give the time, even if they have the qualifications—carte portraits which are to be valued on the score of art alone; and there is the consideration, moreover, that their customers in the main require something beyond. Hence it is that the finishing of small portraits is a matter of so much importance.

The finished carte is, as we have before maintained, something of an object of *vertu* or *article de Paris*. We would give an English name, if we could find any so expressive. The purchaser, nine times out of ten, is not the same as he who asks for a carbon enlargement on opal, or a large study finished in chalk or pigments. In the latter case it is art alone that carries the day; in the former the customer wants some bright, presentable little objects for giving away. Many people have their portraits taken once or twice a year; while they are staying at a fashionable watering-place, or are up in town for the season, they call at a studio, in which they have seen some novel and attractive little portraits, and put down their guinea or half-guinea for a dozen. If they are not regular customers of the photographer, they may argue, "Well, I meant to have my portrait taken this year, and I shall get some done like those new ones in Oxford Street;" or, again, "My last portraits are so antiquated, I really shall be taken like Matilda, upon nice black cards with gold borders," &c. In a word, the "finish" of a picture secures new customers, and this is why it is so important.

We need not insist upon such a quality as neatness in the finishing of a picture; nor need we point to the importance of making the best of a photograph, although the latter never seems to receive the attention it deserves; a defective portrait, as everybody knows, can be made presentable, and a good one considerably improved, by tact and judgment in printing and mounting; yet at some studios the same hard-and-fast rule prevails as to the vignetting and trimming, whatever the negative may be like. The white card mount, thank goodness! is now very seldom seen—at any rate, without a tinted or Indian border—and hence the high-lights of a photograph are not made



to suffer as was formerly the case. The cream-coloured mount that now almost invariably takes the place of white gives a chance to photographs with degraded lights, while the reason of black mounts being so popular is very evident: they permit the use of deep rich shadows without these appearing unusually heavy.

Much favour has been bestowed upon the large three-quarter portraits on shining ebony cards and gilt bevelled edges. Novelty has much to do with this predilection; the thick card, the handsome gold bevel, and the exquisite finish are all attractive. The portrait itself presents nothing new, and is such as any good photographer might produce; yet there cannot be a doubt that a considerable impetus has been given in portrait photography by this new style of mounting—an impetus that has nothing to do with the art of photography itself.

While, then, art must be the basis of all good photography, art alone will not make the ordinary photographer busy. He must believe also in fashion, style, elegance, *chic*, or by whatever term he chooses to call that quality which attracts the public.

Reutlinger, of Paris, was one of the first to thoroughly understand the importance of studying fashion in the matter of small portraits. He it was who was so successful in the preparation of glazed and medallion pictures, and in the printing of fancy borders around the portrait, so that the high-lights did not suffer by juxtaposition with the mount. Reutlinger was in the zenith of his fame just before the Franco-German war, and this, unfortunately, brought to a precipitate standstill a most brilliant business. Reutlinger understood posing and retouching to the letter, but he understood how to finish a portrait still better, and this enabled him to distance his Paris colleagues.

Other Continental photographers have been hardly less successful than Reutlinger in introducing changes of style and finish, and one of the last modifications—for it involves no actual photographic change—is that recently described by Fritz Luckardt in the YEAR-BOOK OF PHOTOGRAPHY, which is so simple that it wants but a word or two to describe it. And here we may point out a singular circumstance. While to foreign photographers we owe most of the changes in respect to “finish” of carte pictures, it is to photographers in this country that changes in their size and form—no less an element of fashion, elegance,

and *chic*—are due. The cabinet portrait, the promenade or panel, and the Malvern all date from this country; and although there are *formats* with other names, none are so popular as these.

In conclusion, then, we would say that photographers would do well to look upon carte portraits not only from an art point of view, but also in the light of *articles de vertu*, or bright little knicknacks upon which taste and fashion exercise an influence. It is, we assure our readers, because the photographers of foreign capitals pay more attention to this point, and not because they produce better photographs, that they secure the favour of so many of our travelling countrymen.

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### THE ELIXIR VITÆ OF PHOTOGRAPHERS.

It is not so long ago that at the London Photographic Society there arose a discussion upon the fleeting character of albumenized prints, and that one of the members, out of patience with the frequency with which the subject had been discussed, and the repeated fruitless attempts made to overcome the difficulty, suggested to the president the appointment of a committee then and there, who should go thoroughly into the matter, and once for all tell photographers how permanency in silver printing could be ensured. We call to mind even now the indignant, not to say defiant, manner of the member in question, at being worried day after day by the vexatious problem, and his determination to put the matter down, as it were, by sheer force. The proposition met with little favour, for one reason because of the excited tone adopted, and for another, doubtless, because the Society were not so sure of the efficacy of the remedy suggested. Anyone "can call spirits from the vasty deep," they remembered, but, like Hotspur, no doubt thought, "But will they come when you do call them?"

This brings us to our text. Chemical and physical research is a mighty thing in its way, but it is not all-powerful as some photographers think. There is no harm in trying to find out the cause and remedy of a difficulty; indeed, unless we do try, we shall never be able to remove any of them. But, on the other hand, it does not follow that because we try we shall

succeed. Some time ago we listened to a lady dilating upon cremation. We agreed with her on many points; but for want of a better, we brought forward the well-worn argument about death by poisoning. Supposing some days after the body was burnt there was a lurking suspicion that the man had been poisoned: what was then to be done, we asked? Her triumphant reply was that chemists, if requested, would soon furnish a series of "test papers," and these applied before cremation by doctors or friends would proclaim whether the deceased had swallowed anything poisonous. Our lady-friend had evidently heard of blue and red litmus paper, or of turmeric paper, and knew how readily these proclaimed the presence of acid or alkali, and so rushed to the conclusion that chemists can give us any tests they may be asked for.

Now there is nothing more praiseworthy than investigating, and on every hand we find chemists hard at work upon original research. A bye-way of chemistry is taken up, and all the ramifications on this hand and on that are investigated. The colours we get from coal tar is a capital illustration. Perkins' purple or magenta, found out some twenty-five years ago, was the forerunner of a magnificent series of colours which have gradually been evolved from coal tar by chemists steadily working away at the subject, and jealously watching every action and reaction. Permutations and combinations are tried and re-tried, and, as a reward of all this labour, we have a most varied range of tints. But, it appears, a satisfactory aniline black has not yet been discovered. Over and over again the dyer has said to the manufacturer of these dyes, "Why don't you make a black? Get a chemist to find out one for you." For the chemist, to many people, is the *deus ex machina* that shall invent anything at will. But the dye manufacturers have done this; they have not only employed year after year the most skilled chemists to find out the desideratum, but they have, moreover, offered large sums of money for the process, should any outsider discover it. But notwithstanding the circumstance that nearly every other tint can be prepared, a good black is still unfound.

We do not believe there is a solitary case on record of any important discovery in chemistry or physics having been made in the hope of winning a prize. Of course, no investigator investigates for nothing; he is always alive to his interests. Either he desires to make a name or money by his labour, and



if he is successful, he makes both. He is simply like any other workman, and workmen do not, as a rule, work without some chance of profit. But bidding a chemist discover a certain nostrum, is like asking a man to unearth a hidden treasure whose very existence is doubtful. There are two elements necessary for his success: first of all, there must be a treasure; and secondly, he must dig at the right spot. Success must at least be possible, or it cannot be attained, whether it is a chemist or anyone else who works. Chemists are busy every day with the solution of problems, and "Nothing venture, nothing win," holds good in their case as in any other; but, for all that, you cannot buy a discovery until it has been made, those photographers should remember, who contemplate the expenditure of money or time in the acquisition of something they are yearning for.

The past is a very good lesson for the future. The offering of prizes in money or gold medals for successful research is not a novelty. Most photographers remember the munificent prize of many thousand francs, instituted by the Duc de Luynes, and in Italy and Austria similar incentives have been given. Nay, at this very moment there are prizes offered by Paris and Vienna for the attainment of certain results in photography, while the Paget Prize of fifty pounds was but awarded two years ago. Of all these we do not think there is one that has been given for the original object. The prizes have been awarded to persons who most nearly fulfilled the requisite conditions, and not one of the fortunate recipients, we make bold to say, ever gave the prize one thought while he was hard at work. If the discovery tallied pretty well with the conditions, this was a pure coincidence, and nothing more. The discovery would have been made just the same, even if there had been no prize. In fact, the prize is generally awarded in the end, not because the recipient has fairly gained it, but because the donor naturally does not like to withdraw the gift. Poitevin, who received the lion's share of the Duc de Luynes's prize, had it decreed to him because of a long list of researches which the prize committee specified. These had been undertaken year after year in his laboratory, quite irrespective, of course, of the chance of winning a premium. Poitevin, we hold, was more entitled to the award than anyone else; but, according to the strict terms of the competition, he was not entitled to it at all.

One word more. If other proof were wanting that prizes in money spontaneously offered are valueless in influencing research one way or the other, it is afforded by the fact that the Government has, during the past five years, spent twenty thousand pounds in the endowment of research. The money may have been well or ill-spent—we fear those who had most influence got most of it, and the needy inventor without friends is as needy as ever—but can any one point to a single investigation of value which would not have been undertaken but for this grant? So we say to photographers: research is always valuable; but do not suppose that you have simply to pay an investigator in order to get the panacea you require.

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### WHAT PHOTOGRAPHY DOES FOR SCIENCE.

TWENTY years ago it would not have been difficult to enumerate within the space of this article the chief duties photography discharged in connection with science. She was a species of upper-servant then, performing valuable services enough, but rather of a light order. To-day she is a maid-of-all-work, put upon, on every occasion, to discharge all sorts of functions, whether menial or high-class. Unlike her domestic sister, she is always to be trusted, and hence the most responsible, as well as the most servile offices, are relegated to her domain. Nor is it only, as in former days, a few of the sciences that employ photography; men conducting researches of vastly different character unite in their desire to work photography; and among astronomers, meteorologists, surgeons, physicians, geologists, chemists, physicists, and botanists, the camera is regarded as one of the most useful of investigating apparatus.

Photography helps science in two ways: it is employed in the high office of investigation, and in the subservient one of simple record. The best illustration we have of its use as a mere recorder is that to which it is put at the Kew and other observatories. Day and night, unceasingly, photography watches the fluctuations of the barometer, the rising and falling of the thermometer, and the delicate pulsations of the swinging magnet which tell of the sudden bursts of magnetism that vivify the earth at intervals. All the changes, whether they be weak or

strong, that take place among the observing instruments, are written down accurately by photography, hour after hour, and thus a most trustworthy record is secured for after-comparison and study. Not only are the labours of assistants thus spared, but, what is of far more moment, the records obtained are infallible, and beyond the reach of human error. The daily pictures taken of the sun at Kew and Meudon (we mean, of course, when the orb is visible) are other instances of the value of photographic records, of which we could multiply instances without number.

It is, however, when photography is used as a means of investigation that more interest attaches to the subject, and within the past two years especially there have been some wonderful discoveries made through the medium of our art.

To commence with surgery—for, as Pope very truly says: “The proper study of mankind is man”—we may mention the important research of Dr. Koch, of Berlin. Dr. Koch was on the look-out for bacteria, those tiny organisms which invariably attend decomposition (if they do not represent decomposition itself) in animal tissue, for, although the presence of these noisome animalculæ in diseased flesh was pretty well established, no one had been able to point them out with even the most powerful microscope. Dr. Koch, in the course of his researches, bethought himself of photography, and he was delighted to find that the camera showed to the world something which had previously been invisible. He found not only bacteria present in animal tissue, but he found, too, by taking pictures of the tiny organisms, that their shape and form varied with the nature of the disease by which the animal tissue had been attacked. Thus he discovered that the tiny bacteria responsible for gangrene, the deadly disease before which all hope for the patient begins to fade, were shaped like tiny currants or grapes hanging clustered upon fine cobwebs, while tissue cut from an animal suffering from relapsing fever showed, when photographed, the presence of thin hair-like organisms. As these organisms were not visible under the microscope, to photography alone is due their discovery. This presence confirms in a wonderful way the theory of Professor Lister, whose anti-septic treatment in surgery has for its motive the preservation of a wound from these evil-doing animalculæ.

This example amply suffices to show the value of the camera



as an investigating apparatus in medicine. Another instance, almost as interesting, is the research on the action of the pulse and heart by Dr. Ozanam, Dr. Lucs, &c. Dr. Ozanam, it may be remembered, established dirotism—or, rather, demonstrated double beat of the pulse—by photography; while Dr. Diamond, Dr. Wright, and others, have also proved over and over again how valuable photography is in studying mankind in health and disease.

Coming next to the science of chemistry, a recent example may be quoted to show how photography can help the investigator here; we refer to its aid in the analysis of iron and steel. Messrs. Parry and Tucker maintain that theoretically, at any rate, a well-focussed photographed spectrum of any iron or steel is an unerring index to its composition, and although in practice this is not absolutely true, still the lines in the photograph tell us more than we could otherwise divine. The question whether two steels are of the same quality can be settled in half-an-hour by photographing the spectrum of each side by side on the same plate, supposing the two metals to be homogeneous. "There is something so absolutely certain in a photographed spectrum," says Mr. Parry, "that it is most desirable to establish photography as the basis of all spectroscopic work."

And this brings us to the important use made of photography by the physicist, the astronomer, and the meteorologist. By merely photographing the spectrum, as Draper, Abney, Vogel, Waterhouse, and many others have shown, there is much to be learnt both at the red end of the spectrum and at the violet end. In the case of the latter, indeed, it is simply impossible to study the phenomena without the assistance of a camera. Dr. Huggins' pictures of the stars—or, rather, of the spectra of the stars—may be cited as a wonderful investigation only rendered possible by intelligent photography. M. Janssen's pictures of the sun's orb, again, in which he has been able to secure half-tone for the first time, therefore giving us an insight of the sun's mass—of the limb we had already learnt much through the camera—may be quoted as a further example of astronomic investigation by skilful photography, to say nothing of the many camera pictures taken during eclipses, which have made us familiar with solar phenomena whose presence was not dreamt of twenty years ago. Another no less remarkable lesson is afforded by a comparison of photographs of the sun with the photographic

records kept of magnetic disturbance. It may seem strange at first sight that any such comparison could furnish data of importance, and yet the most specious results have been deduced therefrom. The recurring presence of sun spots, as shown by the solar pictures, answers to the recurrence of magnetic disturbances, as shown by the photo-magnetic records, and hence a relation one to another is here established which cannot be gainsaid. Mr. Warren de la Rue's moons, which were afterwards eclipsed by Mr. Rutherford's stupendous pictures of the same orb, are further proofs of the value of photo-astronomical observations. In short, in the realms of physics, astronomy, and meteorology, the aid of the camera has now become indispensable.

In conclusion, we may cite also the study of anthropology and geology by means of the camera as interesting examples of scientific photography. The clever plan of measuring skull sections recently adopted is singularly useful. A black scale with white marks is set up against black velvet, and photographed; but instead of developing the plate, this is used in the camera a second time, to depict a skull; the latter is put in the plane previously occupied by the scale, so that no fresh focussing is necessary. The plate, after the double exposure, then shows the skull with the scale running through it. A series of pictures taken in this way are said to furnish most important information either for study or instruction. In respect to geology, one of Mr. Whymper's Chimborazo pictures furnished an excellent illustration of the aid photography may lend to the subject, for it demonstrated the thickness of the ice crust deposited at a specific altitude. The height of certain objects in the vicinity permitted a comparison of the crust, which, as the picture clearly showed, was of very uniform thickness.

We repeat, however, it is in the more delicate applications of photography to science that most interest attaches, where the results are due almost as much to the skilled worker as to the art itself; and it is well for those interested in photography to look back occasionally upon the difficulties surmounted and the discoveries made, which, but for the existence of our art-science, would have still remained stumbling-blocks in the path of progress.

## PHOTOGRAPHY AS CLERK AND DRAUGHTSMAN.

IN employing photography in the capacity of a clerk or draughtsman, there is always one inestimable advantage: you can rely implicitly upon the truth and correctness of the result. And this quality, we believe, is likely to cause photography to be employed in years to come to a very great extent in the bureau of the statesman, the counting-house of the merchant, the office of the lawyer, and the workshop of the engineer. True, we have now-a-days many clever autographic copying processes—the gelatino-glycerine cake is one of the simplest and best—by means of which a writer may take one or more copies of his manuscript; but these, if they render photography unnecessary in certain instances, do not restrict the usefulness of the art in any degree.

One of the first, if not the very first, record we have of photography undertaking the duty of copying clerk is that cited by Professor Alexander Herschel. He has told us how his father, the late Sir John Herschel, made use of photography with iron salts—the blue process—for copying his calculations and intricate tables. These cost so much trouble to produce, and represented such valuable investigations, that he was exceedingly loth to trust them out of his hands. For many reasons it was necessary to prepare a copy or copies of his work, and as he could not rely implicitly on anybody's figures but his own, he himself had the trouble of writing them out. To photography, then, he turned at the first opportunity; he could trust it, obviously, even better than himself to copy the elaborate calculations, and could rest quite sure that not a single error crept into the mass of figures during their reproduction.

The blue process, which gives white figures on a blue ground, is still frequently employed, especially by scientific men who want simply a rough copy of their work; but it naturally has the disadvantage that the ground is not white. Still the paper is so exceedingly easy to prepare, and the process so simple, that it will long command attention where occasionally a valuable MS., an intricate calculation, or an elaborate plan has to be copied. The ink of the original should be as black as possible—Indian ink is best; and for printing, the document is simply placed above the prepared paper, the two being kept flat by means of two plates of glass held together by clips or other simple con-



trivance. The process is already well known to our readers, but it may well be repeated in Professor Herschel's own words:—

“ The solution for treating the copying paper is as under:—  
 Citrate of iron (or ammonio citrate) ... 140 grains  
 Ferricyanide (red prussiate) of potash ... 120 „

dissolve together in two fluid ounces of water. The solution can be kept in a glass stoppered bottle, well wrapped up in a dark cloth, or shut up in a dark cupboard, for any length of time. It is applied to the paper by means of a brush, or tuft of cotton wool, and the surface dried in the dark. Two or three minutes' bright sunshine suffices, if the original is on thin or tracing paper, for printing, and the fixing is done by washing in clear water for a few minutes.”

The “ Pellet ” paper, a patented article, which may be readily purchased in any large town, is better than the above process, for the reason that the copy is in blue upon a white ground. But the manipulations, on the other hand, are a little more elaborate, and the method is more costly. Where much copying is done, the Pellet paper is largely used, as, for instance, in the engineering departments of the Great Eastern and other railways. The use of photography in such connection is very obvious. Here is one example. The Company desire to purchase some engines; to do this as moderately as they can, they put out the work to tender, and supply any firm desirous of contracting with an elaborate plan showing every minute detail. Formerly, tracings were made of the original approved plan, and these were supplied to would-be contractors. Of course tracings are comparatively easy of production, and with a little care there should be no mistakes in copying; but by bringing photography to bear, the expense of copying is reduced as nearly as possible one-hundred fold, while the chance of error disappears altogether.

Among diplomatists and lawyers, photography as an accurate copyist is also beginning to be appreciated, but here it is desirable to have a reproduction in black, and for this reason we think that the process of nigrography, to which attention has recently been called by Captain Pizzighelli, is likely to find favour. The ordinary autographic copying processes to which we have alluded, and which give from one copy to two or three score, handy as they are, do not suffice to satisfy the lawyer and diplomatist's wants. In the first place, the document to be

copied may have been written ages ago, or it may happen that it cannot be copied until it is signed; and when this takes place, the writing has lost its virtue to copy in the ordinary way. In these circumstances the photographic art is singularly useful. Copying by hand is out of the question, for even if done correctly, the copy may lose all its value by not being a *facsimile*. Here is an instance of what we mean. A Russian document was recently submitted privately and confidentially to a foreign minister; it was impossible to leave the pamphlet—for it was of several pages—in his hands for more than a few hours, and yet the minister urgently desired a copy. There were clerks in his office who understood French, German, and Italian thoroughly, but Russian characters were too many for them. In a fortunate moment the chief clerk bethought himself of photography, and suggested it to the principal; the pamphlet was unstitched, spread out upon a drawing board, and within a few hours there lay another similar volume in miniature, upon the minister's desk, produced by means of photography, and fit for translation and perusal at leisure.

Diplomatic enclosures, which are generally confidential, are now frequently repeated by photography, either by the aid of the camera, or by simply printing through; while lawyers also employ the art for making facsimiles of authentic documents. A photographic copy is held in a court of law, now-a-days, to be as good, almost, as the document itself, for a witness can swear to the handwriting and style just as well as if he had the original before him. Any intelligent man, too, can do the work of copying after a little practice, whether it is the blue process, Pellet process, or nigrographic process he makes use of. The last is more elaborate than the blue process, but with a little practice is soon acquired, while it yields most excellent results. Paper thoroughly sized is floated in a dark room upon a solution of—

Gum-arabic	...	...	...	...	25 parts
Water	...	...	...	...	100 „
Bichromate of potash	...	...	...	...	5 to 7 „
Alcohol	...	...	...	...	1 part

Or the mixture may be applied with a broad camel's hair brush. Dried, and kept in a cool dark place, it will remain fit for use a long time. It is exposed in the same manner, and for about the

same time, as in the blue process, and is then put into cold water for twenty minutes to wash out the unchanged bichromated gum. When dry, a dozen or more prints may be taken at a time, and treated with the black colour, made up of—

Shellac	...	...	...	...	5 parts
Alcohol	...	...	...	...	100 "
Finely ground lamp black	...	...	...	...	15 "

This is applied with a sponge. Afterwards the papers are laid in water acidulated with sulphuric acid (containing 2 or 3 per cent. of acid), when the superfluous black colour is removable by a brush, and the writing or design appears in fine black lines upon white paper.

Another process, which has been recently worked out by Captain Pizzighelli, also yields capital prints. Thirty volumes of a solution of gum-arabic (water five parts, gum one part) are mixed with eight volumes of an aqueous solution of citrate of iron and ammonia (water two parts, double salt one part), and to the mixture is added five volumes of an aqueous solution of perchloride of iron (water two parts, iron one part).

The mixture appears limpid at first, but soon grows thicker, and it should be used quickly after mixing; it is applied to well-sized paper by means of a brush, the paper being dried in the dark.

Any design, drawing, or tracing may be employed as negative, and, after printing a few minutes, the development is proceeded with. A solution of ferro-cyanide of potassium (water five parts, ferro-cyanide one part) is applied with a brush, and the picture appears almost instantly as a dark-blue positive. As soon as every detail has appeared, the print is quickly rinsed, and then put into a dish containing dilute hydrochloric acid (water ten parts, acid one part), when the image becomes clearer and brighter, the ground gets white, and the gum-iron film is removed. After further washing the print is dried.

There can be little doubt that prepared photographic paper will soon be found in every large office where valuable documents abound. The labour saved, as well as the accuracy assured, are already important points, and when to these is added the circumstance that a *facsimile* is the result, firms of many kinds will not be slow to avail themselves of the advantages of photographic copying. With a camera at one's disposal, it is possible,



of course, to do yet more, for huge manuscripts may in this way be reduced to small dimensions, while their intrinsic value yet remains. But to use a camera again, more photographic skill is required. Very little knowledge, on the other hand, is required for simple photographic printing of the nature we have mentioned, and with its aid the duties of clerk and draughtsman may often be advantageously discharged.

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### DARK-ROOM DISEASE.

WITH the partial, if not general, abandonment of the wet collodion process, we anticipated an improvement in the sanitary condition of the dark-room. The fumes of ether and alcohol with which the photographer was troubled, when "cabined, cribbed, confined" in his sombre laboratory, were no more to poison him, and he would be able to breathe air as fresh and good as that in any other room of his establishment. There was no doubt about the noxious influence of these fumes, albeit many were fortunate enough to escape their ill effects. One instance is still fresh in our memory, and to this day we wonder how an assistant we once met during the sultry days of a Paris summer, contrived to exist in good health in his close confinement. The dark closet in which he was located was on the roof of one of the big houses on the Boulevards, and here he stayed from morning till afternoon, just under the roof, coating plates with collodion as fast as they were called for in the studio close by. The heat of the studio was already oppressive, and now and then, when the dark-room door opened to receive one dark slide and give out another, some idea could be obtained of the hot noxious atmosphere therein. But, like Albert Smith's engineer in a gunboat on the China seas, whose engine-room thermometer stood above a hundred, and who always sat down to enjoy himself, because his confined space prevented him from standing upright, this assistant, we remember, never grumbled at his lot, but took it as a matter of course. He perspired freely in his shirt-sleeves, and seemed to exhale in this way anything noxious he might absorb.

That many gentlemen have suffered from inhaling ether and alcohol, and suffered seriously, too, there cannot be a doubt.

Ether and alcohol swallowed as vapour is quite as bad, doctors tell us, as ether and alcohol swallowed in the form of liquid. It is for this reason that the use of effervescing and mineral waters has been so strongly advised for such sufferers, together with the cessation of all spirituous liquors; while, of course, fresh air and exercise should be taken as abundantly as is possible.

Unfortunately, it appears that although we may discontinue the use of wet collodion, and thus get rid of ether and alcohol fumes, we cannot get rid of sickness from the dark-room. Several examples have, of late years, been cited of disease brought about, it is said, through the practice of alkaline development. One patient recently described an attack as commencing with a small irritating spot on the back of the hand; a number of small pustules next appeared, which spread rapidly up the arms to the shoulders; they next appeared in his legs, especially under the bend of the knee. The disease is very stubborn, and does not, we are told, readily yield to treatment. Its characteristics are sores and lowness of the system.

Now, the difficulty has been to find out really what is the offending agent. In alkaline development we have to deal with ammonia, pyrogallie acid, and bromide of potassium, and it has been sought to fasten upon one of these the insidious action. The ammonia, especially of the strength at which it is used, is almost above suspicion, and no medical man would think of attributing a disease such as we have mentioned to its agency. There only remain, then, pyrogallie acid and bromide of potassium.

Now pyrogallie acid, virulent poison as it is, when taken internally, is not prone to injure by contact.\* Its principal feature is, that it is a powerful absorbent of oxygen, but as such is not likely to be harmful to the skin. Again, pyrogallie acid has been so generally used for years past by the photographer *sans peur et sans reproche*, that it is rather late in the day to call out about its noxious influence. Combined with silver it causes

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\* Several isolated cases of poisoning have no doubt occurred from constant contact with strong solutions, but these may almost be taken as exceptions to the rule that the generality of photographers do not suffer. Pyrogallie acid is a constituent of most hair dyes, which are very freely used in contact with the skin.

some stubborn marks on the cuticle, but the marks are only skin-deep, and their character, from a hygienic point of view, has never been seriously questioned.

So that there only remains bromide of potassium to be considered, and since the suggestion has been made that there is an eruption already known as "bromide spots," it is to potassium bromide that several photographers have pointed with a warning finger. Now bromide of potassium is of course almost invariably present in an alkaline developer, but it is by no means a dangerous agent. No doubt fingers continually dipped into a liquid containing a solution of bromide might absorb the same into the system, but is it likely that the compound would be taken up in dangerous quantities? Bromide of potassium is a valuable medicine, and it is taken not in small quantities, but in large doses. Twenty grains three times a day—that is, sixty grains per day—is the regular dose prescribed for epileptic patients. Eruptions from the use of the bromide, if they follow, are of exceedingly rare occurrence, so much so that doctors, as a rule, do not take the result into consideration. Bromide has a lowering effect, as most people know, and it is also prescribed as a valuable medicine in connection with bronchial affections. But the effect of such amount as could possibly be absorbed by photographers putting their hands in a weak solution of bromide—like that employed in alkaline development—cannot for a moment be compared to the influence upon a patient who drinks many grains of it a day.

We once placed this subject of alkaline development, and its likely influence upon the human system, before two medical men of repute, and sought their advice. We detailed the cases of three different photographers which had come to our knowledge, and placed before them the solutions in general use in the photographic laboratory, so that they might form as sound an opinion as possible on the causes of sickness. Both of these gentlemen agreed there was nothing in the solutions to account for the symptoms complained of. These symptoms were evidence that the sufferers were very much out of health; but that any of the solutions with which they had to do was the cause, there was no evidence at all to show. When further questioned upon the subject of the gelatine process, we mentioned that bichloride of mercury was employed for intensifying. A solution of this, if frequently touched by the hands, might bring about salivation,



and attack the gums; but of this there was no complaint. In a word, our medical friends were at a loss to ascribe the disease to any noxious chemicals in the dry-plate laboratory.

But they readily agreed as to the probable cause of the attack, notwithstanding; it was, in their opinion, the dark-room itself that caused the mischief. Cutting off free access of air and light was very likely to produce the symptoms, the absence of light being quite as deleterious as want of ventilation. Many hours a-day in the dark-room—especially in dark-rooms as they are arranged for the gelatino-bromide process—were exceedingly likely, in the opinion of both medical men, to bring about a low state of health, for which they would prescribe steel and plenty of fresh air. We may, indeed, here set down a prescription which one of our friends did not hesitate to advise at once, in the case of a photographer who was in a low state of health from an excess of dark-room work. Here it is, perchloride of iron and strichnine being its principal constituents:—

Liq. ferric perchl. dil.	...	...	1½ drachms
Liq. strichnæ	...	...	1 drachm
Aqua chloroform	...	...	6 ounces

One-twelfth, three times a day, after meals.

It would seem from this that it behoves photographers who have much dark-room work to do still, to be careful of their health. They may get rid of ether and alcohol fumes by giving up the wet process, but because they do this they must remember that ample ventilation is still necessary, if they wish to enjoy good health. Sensitive gelatine plates necessitate the stopping of every crack and cranny in the most careful manner, and in doing this, photographers sometimes stop up at the same time their last chance of ventilation. They breathe a vitiated atmosphere hour after hour, and it would be wonderful indeed if their health did not suffer. Well-ventilated dark-rooms are quite as readily constructed now as formerly, although a little more care may be necessary to exclude light.

The matter of darkness, or ruby light, upon which our medical friends laid much stress—for it is a mistake to suppose that only the optic nerves are thereby affected—is a more serious question, especially if the photographer is subject to it for long, and combined with lack of ventilation. Medicine alone will not combat the ill-effects; plenty of fresh air and out-door exercise

are the most efficient remedies, the photographer should remember, and these are restoratives, fortunately, within the reach of all. An energetic walk every day after business hours is said to be one of the best antidotes for dark-room sickness.

### A PLEA FOR THE BURETTE.

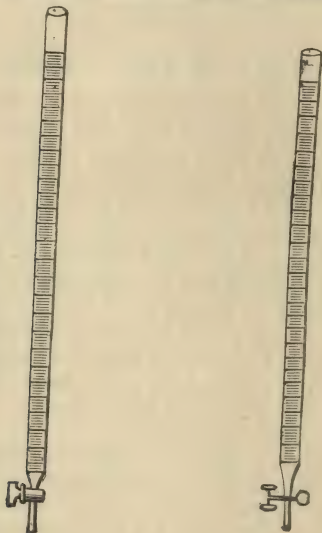
THE photographer is usually deficient in chemical apparatus, and, truth to tell, he can get on very well with a limited supply of it. But if there is no need for a complete chemical laboratory in connection with the dark room, it is important he should have proper utensils at hand when he does want to perform an experiment or make some simple assay. Where space is limited, our advice is to keep one corner of the work-room, or of the dark-room, if it is large enough and light enough for the purpose, for a laboratory corner; all that is absolutely necessary is a shelf near at hand, where a few pieces of apparatus may be kept clean and orderly, a small firm table or ledge for working on, and an adjacent sink. It is well to have a gas main with flexible gas tube and burner, but this is not indispensable, as a spirit lamp answers most purposes.

A few glass beakers, test-tubes, and wide-mouthed stoppered bottles, always kept clean, some filters and a filter stand, a flask or two, and iron ring-stand for boiling, one or two porcelain evaporating dishes, and perhaps a retort, represents a stock of apparatus that most photographers would consider luxurious. Yet its cost is only a few shillings, and any photographer who desires to learn the why and wherefore of this or that reaction can scarcely do without it. But we are about to advocate a still further addition to the modest outfit of a photographer, an item more expensive still than any just enumerated; we mean the burette.

The burette, however, is not a very costly piece of apparatus, after all. We show two kinds of burette here (fig. 1), either of which will suit the photographer, though we advise him to use the one having a glass stop-cock. They are termed Mohr's burettes, and are to be obtained of any dealer in photographic and chemical apparatus. Supposing the photographer to be satisfied with a burette containing 50 cubic centimetres, he can obtain one with a glass stop-cock for five shillings, while that

with the pinch-clamp costs four. For this amount he will receive a vessel graduated not only into cubic centimetres, but into tenths of these as well.

For use, the burette, after being filled with liquid, is made

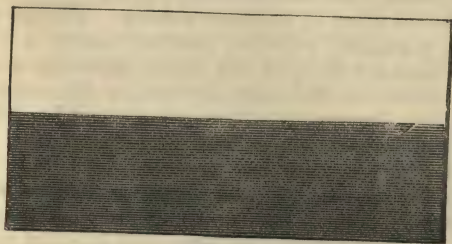


*Fig. 1.*

fast to a firm stand—the iron ring-stand will do—in such a way that it hangs over the table before the experimentalist, its tap ready to hand, and its scale more or less on a level with the eyes. The tap should be some inches above the table, so that any vessel destined to receive the liquid from the burette can be placed underneath without difficulty. The tap is turned and the liquid runs from the burette in a small stream. To control the amount of liquid issuing forth is the easiest thing in the world, for you have simply to observe the scale on the burette, and to turn the stop-cock as soon as the liquid has sunk to a certain degree. Thus it is easy not only to read off cubic centimetres, but also tenths of cubic centimetres, without much difficulty. To aid in reading off, chemists generally employ a little screen, half white and half black, which is put behind the scale, and so shows the



level of the liquid at a glance (fig. 2). This screen, of course, is easily made out of a bit of cardboard.



*Fig. 2.*

For some purposes the pinch-cock—a pincers pinching a little bit of rubber tube—is more handy than the glass stop-cock, which, by the way, usually wants greasing a little to make it work smoothly, and to prevent leakage; but for photographic purposes we think the latter is preferable. The rubber tubing contains sulphur, which is objectionable, and cannot well be cleaned; at the same time this form of burette is more quickly used, and the liquid flows more freely.

It is difficult to say for what photographic operations the burette may not be used with advantage. In the first place, it may be employed as a simple measure, or converter of English drams and ounces into cubic centimetres. All calculation of fractions is at once avoided; to turn a fluid ounce (English) into cubic centimetres (French), we simply turn the liquid out of the ounce measure into the burette. To measure off cubic centimetres accurately again, there can be no more simple plan than that of filling the burette, opening the stop-cock, and reading off as the liquid descends in the scale.

A burette divided into tenths of cubic centimetres allows of the measurement of very small quantities, and the measurement of small quantities is usually not gone into by the photographer, because in ordinary circumstances it is troublesome. But, as soon as he finds that it is as easy to make small and accurate measurements as to make haphazard guesses—and with a convenient burette this is so—the photographer will be ready to adopt the more rational mode of proceeding. The fraction of a cubic centimetre may appear very small to write about, but when familiar with the burette, the measurement of tenths is a very

simple matter. In fact, it is almost impossible to make such measurements without it.

We have found it convenient to employ the burette to hold the warm solution of silver in emulsion making. The fine stream of silver can be regulated with the greatest nicety in a burette. The eye watches the scale as the liquid gradually runs down, and both hands are at liberty for mixing the emulsion. If coming too fast, the stream may at any moment be cut off, and the dose of silver increased or diminished to the tenth part of a cubic centimetre with exceeding accuracy.

Other similar uses will suggest themselves for the burette—a study of Sutton's *Volumetric Analysis* is to be commended—but its existence in the photographic laboratory is called for, if only because of the means it furnishes of testing the strength of silver solutions. This may be done roughly, as most photographers know, by employing a floating argentometer, which is immersed more or less according to the gravity of the silver bath. But silver solution, if it has been employed, say, for sensitizing paper, contains other bodies beside nitrate of silver which interfere with its gravity, such as nitrate of potash and ammonia. Its strength may have been exhausted by the formation of haloid salts of silver, or the amount of nitrate of silver in solution may have been uncertain from the first. To discover, then, the actual contents of silver in a solution by chemical means should be in the power of every photographer, and, without a burette at hand, the process is both a long and tedious one.

We have made use, for some time past, of the scale given by Dr. Lagrange some years ago, which is one of the most practical the photographer can employ for testing the value of silver solutions. He has simply to note in his laboratory-book, or hang up in his work-room, a series of numbers, which show how much salt solution is required to neutralize silver solutions of certain strengths, and then a simple laboratory experiment proclaims at any moment the strength of any silver solution he may be called upon to examine.

A standard solution of common salt is prepared with distilled water. If the photographer desires to be very accurate, he may purchase pure crystallized chloride of sodium for testing purposes; for this is hardly requisite for every-day work. The standard should be made up of—

Chloride of sodium	...	...	...	1 part
Water	...	...	...	10 parts

and this may then be put into the burette. To test your silver solution, put a cubic centimetre of it into a test-tube, add about twenty times as much distilled water, and a few drops of nitric acid.

The silver solution is now ready for bringing under the burette; turn the tap, and let the standard solution of salt flow for awhile. A white cloud of chloride of silver will be produced, and this whitening of the solution will proceed as long as there is silver left in it. The salt solution should be added with care, too little rather than too much being employed. In fact, it is well to make the addition twice, thrice, or even oftener, the solution being carefully filtered in between every addition. As soon as no more chloride is formed, the amount of standard salt solution emptied out of the burette is read off. If, say, the reading is 5·7, which means that five cubic centimetres and seven-tenths of a cubic centimetre of salt solution have been expended, then the photographer knows he has a solution of silver under examination of strength equal to one part of nitrate of silver dissolved in ten parts of water. If the salt solution expended amounted to 4·8, then the silver solution would be shown to be of a strength of 1 to 12.

But here is a table, which the photographer would do well to note as showing the amount of standard salt solution required to neutralize silver solutions of various strengths. It is one of the most important of tables for the photographer, for however quickly photography progresses in these days of new processes, silver solutions are still to him of the utmost importance.

Of a standard solution of salt,—

14·00 c. c. neutralise one c.c. of silver solution of 1 : 4 strength.				
11·3	"	"	1 : 5	"
9·5	"	"	1 : 6	"
8·1	"	"	1 : 7	"
7·1	"	"	1 : 8	"
6·3	"	"	1 : 9	"
5·7	"	"	1 : 10	"
5·2	"	"	1 : 11	"
4·8	"	"	1 : 12	"
4·4	"	"	1 : 13	"
4·1	"	"	1 : 14	"
3·8	"	"	1 : 15	"



## ON PHOTOGRAPHIC SOCIETIES.

WHATEVER may be said on the subject of photographic societies, it is certain that the progress of our art science is not delayed for the want of them. Indeed, the number of bodies that take photography under their wing is without parallel in any other calling. At the present moment, no doubt, there is unusual activity displayed, as has been the case for two years past, by reason of the revolution, as it has been termed, consequent upon the general adoption of gelatine plates; but, apart from this, the disposition of photographers to meet together and to aid one another has always been most marked. Some societies have come and gone and again made their appearance, while there is hardly an instance of a body disappearing entirely, unless to strengthen some other more important association. If the North London Society, to take an instance, has vanished, those of its members who are still alive and well, and continue to practise the art, are yet found supporting other bodies with unabated vigour; while it is not so long ago that the appeal was made in these columns to resuscitate the old institution once more.

In the metropolis at the present moment there is no lack of opportunity for the exchange of ideas among photographers. Not only is the Parent Society, or Photographic Society of Great Britain, as it has been called of recent years, still in the full vigour of life and health, but it has of late added something to its importance by the holding of supplementary gatherings, termed Technical Meetings, where the conversation has been more general, and the reading of formal papers dispensed with; so that during the season there is a fortnightly meeting here, at which members and their friends are welcome either to take part in discussion, or listen to the experiences brought forward. The South London Photographic Society—South London only in name, as most of our readers know—is again another energetic body, holding its meetings once a month, where the technical aspects of photography are usually more in favour than the theoretical, and, as a consequence, highly esteemed by practical photographers. Next, there is the Photographic Club, where, once a week, both theoretical and technical questions are vigorously discussed, and where, as in the South London Society, demonstrations and lantern displays are not infrequent; and

finally there is the London and Provincial Photographic Association, and the so-called Postal Photographic Society, having head-quarters in London.

The above do not even exhaust the associations in London for fostering the progress of photography. There is an Amateur Photographic Association, over which His Royal Highness the Prince of Wales presides, in which photography as an art is more especially considered; while pure science in photography, as a matter of course, receives attention both by the Chemical and Physical Societies, and by the Royal Society. In our large cities throughout the kingdom photographic associations are found on every hand. That of Edinburgh boasts, we believe, the largest number of members, not only of any society in Great Britain, but in the whole world. Glasgow owns two societies, and there is one still further north at Dundee, of whose energy we have recently had good proof. The steady work of the Manchester Photographic Society is continually before us in the shape of valuable papers, and the same may be said of the Liverpool Society, which has of late distinguished itself by several important contributions to photographic science. The Bristol Society takes high rank, if it were only by reason of the magnificent exhibition brought together under its auspices in the West of England some months ago; while of the other associations in Sheffield, in Newcastle, in Leeds, in Halifax, in Staffordshire, in Bolton, in Cheltenham, in Coventry, in the Potteries, in Yorkshire, and in Oldham, signs of vigorous activity are decidedly apparent. Cambridge University has of late started a Society that bids fair to do good work. The Photographic Society of Ireland, which has been re-established—for there existed already in 1854 a society in Ireland—has lost no time in making amends for its suspended animation, and under the presidency of Dr. Emerson Reynolds has become one of the prominent societies of the kingdom.

Thus there are at this moment a full score of societies or associations occupying themselves in this country with photography—a number which far exceeds that in any other land. France musters but five or six all told, notwithstanding the fact that her population so greatly exceeds our own; and Germany, though it puts a better face on the matter, numbers no more than thirteen, with a population twice as large as the United Kingdom; Austria is represented by one society—a large one,

it must be confessed—at Vienna; Belgium has two societies; Holland, Russia, and Switzerland one a-piece.

The reason of this is not far to seek. In this country there is a large number of amateurs—both ladies and gentlemen—who do not merely dabble in photography, but take up a prominent position therein; indeed, in our exhibition, the medals or awards are given indiscriminately to professional and amateur exhibitors, without raising the least remark. It has become a matter of course for all to compete in the same class and upon the same footing, and it is, we repeat, nothing unusual to see as many high-class awards go to the amateur as to the professional. Such a thing would be regarded as very exceptional on the Continent, and hence we may take it that, in this country, photography is practised much more widely as a pastime than among our neighbours on the other side of the Channel. There is no jealousy here, for the simple reason that no dispute is likely to arise about the intrinsic value of amateur and professional work; indeed, in selecting a jury of awards in this country, the matter never comes under discussion. Men are proposed because of their position in this respect or that; but the circumstance whether they are amateurs or professionals never seems to enter into the question of selection. In a word, with us, amateur photographers, notwithstanding their number, have taken very seriously to their pastime; they not only follow it as an art, but they study it as a science.

To this is due in a great measure the flourishing condition of our societies. Some of the bodies to which we have referred are denominated “Amateur” associations, but whether they be so or not, it is the assistance given throughout the country by amateurs that has contributed greatly to the success of our associations at home. The gelatine process, as also the many dry-plate processes that preceded it, were with but few exceptions brought forward by amateur photographers, who elaborated the methods so well because to them it was a labour of love. Of course their experimental work has been supplemented by the invaluable aid which experience gives, but the professional photographer has rarely the time, even when he possesses the ability, to develop new ideas and carry out plausible theories. With us the amateur—often, as we have seen, an accomplished artist and a subtle chemist—joins hands with the professional worker, and, labouring intimately together, they bring forth good



fruit. But it is usually the former who takes the initiative, and to whom we owe, therefore, much we have learned not only recently, but in the early days of collodion and dry plates.

It is the manufacturer, possibly, who could tell us most accurately the number of amateur photographers in this country; but the list of members in the various societies are sufficient for our purpose in pointing out the source of energy that characterises most of the photographic associations. The president is almost invariably an energetic amateur, whose whole exertions are devoted to the progress of photography. The honorary secretary, the other executive officer, is also a non-professional photographer as a rule, so there is here another guarantee that the art and science aspects of photography are the primary consideration. We are far from deprecating the discussion of commercial photography, but, on the contrary, believe that meetings held by professional photographers with this object would be productive of good, in the same way as the Syndicate at Paris considers the commercial aspect of the question; but the two objects are distinct, and for the present we have merely the matter of photographic progress in view. In considering this, we ought always to remember that to the amateur photographer of Great Britain the progress of our art is in a great measure due, and fortunate indeed is it for us that in this country photography should be cultivated by so numerous and wealthy a class.

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## PHOTOGRAPHERS BY DIPLOMA.

WE have on several points compared the position and status of the photographer with that of a painter or author—in a word, with those who receive just that rank and pay to which their individual efforts entitle them. A painter who is simply a painter because he chooses to call himself one, has no claim to consideration any more than he who fills a few sheets of paper with scribble, and dubs himself author. It is only when one or other has produced work of intrinsic value that he begins to assume a certain position, and this position is a high one or a low one, according as the work produced is great or small. So, we contend, it is with the photographer. A man may purchase a camera and dry plates, but does not thereby have any claim to

position; he has still this to win, and, what is more, he must do it all, as cricketers say, "off his own bat."

So that he is differently placed from most professional men. There is no serving one's articles, studying for a course, passing through a curriculum, or undergoing an examination. Anybody may become a "special correspondent," Mr. Archibald Forbes tells us, who can buy a bottle of ink and a pen; and anybody may become a photographer, if he can only get the tools to work with. Unfortunately, in neither case, is the aspirant very much "forarder" when he has got them. The master-work has still to be performed, if he is to make any sign, and his outfit has scarcely helped him one jot.

But if this is the case with the photographer who is his own master, it does not altogether hold good with the assistant. The photographer's aim in life is to satisfy the public, that of the assistant is to satisfy his principal; and for this reason the assistant, or operator, as he is most frequently ill-named, may well seek to secure a diploma, in order to help him on his way through life. No doubt the best diploma an assistant can produce is a good picture; but all assistants cannot do this. With time and opportunity at their disposal, they succeed after a while in showing good work, and with this most principals are satisfied; but if in the meantime they could exhibit certificates proving the possession of chemical knowledge and art training, their claims would secure still more attention. In large establishments, especially, is theoretical as well as practical knowledge essential, for it is only by thorough economy, and by keeping an intelligent eye upon improvement in manipulation, that photographic operations can be conducted with profit.

This leads us to the point we wish here briefly to discuss. Of late there have been examinations held in this country under the auspices of the Society of Arts and the City Guilds Institute. These have been productive of much good, there cannot be a doubt; but we trust they are the pioneers only of more extended operations. The examinations are instituted by bodies having no relations with photographers in general, and are, indeed, organised for the purpose of testing knowledge in photography as a science, without any reference to the photographic profession. But in France, or rather in Paris, steps have been taken by professional photographers themselves, to institute examinations having special reference to a photographer's daily

work. The Syndicate of Photography in Paris is anxious that the assistant should at no very distant date be an individual possessing a diploma, this diploma being proof of intelligence in general, and a knowledge of photographic operations in particular. The examination is to be both theoretical and practical; and it has very rightly been decided that unless the candidate shows theoretical knowledge in the first place, he shall not undergo a practical examination at all.

The Syndicate proposes to grant to all who pass its examinations a "brevet de capacité," those holding it being qualified assistants. The "brevets" will be of various kinds—those which are comprehensive and denote that the assistant has proved himself capable in all branches of photography, and those given for special subjects, such as carbon printing, collotype, enamel-photography, photogravure, &c. When a candidate passes, his name is to be published in all the French photographic journals; while those abroad will also be invited to note the name, so that the assistant may be known when applying for a post outside his native country.

The "brevets" or certificates are to be of three classes, according to the manner in which the candidate has passed. Thus:—

300 to 350 marks will entitle the candidate to	"fair."
350 to 450	"
450 and above	"
	"good."
	"
	"very good."

But he must earn 200 marks in his theoretical examination, or he cannot proceed; the theoretical questions having reference to (1) photographic chemistry, (2) applied photography, and (3) photographic physics.

The theoretical examinations it is proposed to hold in public, the examiners, or jury, being members of the Syndicate, which numbers among its body many of the leading Paris and provincial photographers. The practical examination will be held in a laboratory under the supervision of the same jury, and this also is divided into three parts. Of these, the Syndicate attach the greatest importance to (1) negative operations and all appertaining to the manipulation of collodion and gelatine, both wet and dry, and (2) printing in chloride of silver in its various forms.

The difficulty in examinations of this kind is to know where



to draw the line ; and the only objection we see to the programme sketched out by the French Syndicate is, that it draws the line a little too high up. Perhaps the difficulty might be met by giving two classes of diploma—a “junior” and a “senior.” Then the assistant who is modest about his attainments might proceed to the first examination, and, passing that, would gain courage to go on to the second. The main thing is to encourage the younger assistants to take an interest in their work, and if they foresee a possibility of passing by moderate exertion, they will not object to work harder subsequently, to secure a second step after they have gained the first.

The French Syndicate is so firmly established, and already enjoys such influence among French photographers, that whatever it makes up its mind to, is likely to become law. Consequently, if the examination of assistants is seriously upheld, we may expect there will be no alternative for the rising generation but to enter for them. If the members of the Syndicate bind themselves to take no other assistants into their employ but those who hold a diploma or “brevet,” then the competing for such honours will become an every-day matter. In this country there is no institution corresponding to the French Syndicate ; the societies we have are supported as much by amateur photographers as by those professionally engaged, and consequently the members have no reason to institute tests of this kind. Still, assistants and operator at home should remember that we are now becoming so cosmopolitan in our dealings, that it matters very little what countryman you are, so long as you know your duty ; and doubtless French assistants coming across the water armed with diplomas signed by a powerful body would get a more willing ear than those unprovided with any proof of scientific ability.

Of course the mere possession of a diploma does not prove that a man is a good photographer ; and this is an argument that we are likely to hear very frequently as soon as photographic examinations are seriously talked about. In like manner it may be advanced, that a man who has secured a B.A. degree is no more fitted to take up a tutorship or secretaryship than another gentleman who has not secured a degree. Granted ; but supposing you know nothing about either candidate, and that they both prove equally eligible on a casual examination, then the chances are decidedly that the B.A. will be chosen, for he

carries with him a proof that he has, at any rate, been thoroughly well educated: you are sure he possesses knowledge which the other may or may not have. So, if two assistants were to present themselves whose abilities seemed equal at first sight, there is little doubt that the principal would prefer the one of whose knowledge he had a proof, furnished by independent and responsible persons, rather than the other whose abilities he has still to find out.

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### ABOUT RAPID EXPOSURES.

WE are not about to describe some new form of shutter that accurately times an exposure to the millionth of a second, nor do we intend discussing the intricacies of mechanism of some of the more elaborate instruments now before photographers; our intention is simply to look at the matter from a practical photographer's point of view, and to discover what it is he generally wants to carry on his work. Whether his wants are met by any of the hundred and one shutters that have been described in these columns and elsewhere, is a matter that must be left to his decision alone.

One of the most important points in connection with rapid exposures is not unfrequently overlooked by the shutter designer. The exposure may be of the briefest, and the vibration reduced to a minimum, and yet the invention, when it comes to be handled practically, lacks perfection. For the advantages we have enumerated go for nothing if the exposure does not happen to take place at precisely the right moment. A shutter may act very rapidly and very accurately, giving an exposure of precisely one-hundredth or one-thousandth of a second; but if it does not act at the proper time, its very rapidity mars success. It is for this reason that most photographers still prefer to employ an ordinary apparatus—such as the drop-shutter before the lens or behind it—in their work. It so rarely happens that an exposure of but a very small fraction of a second is called for; while, in nine cases out of ten, it is of the utmost importance that the exposure should be so under control that the photographer can effect it any instant he desires.

We have had experience in rapid exposures, but have never

yet required to employ one less than one-tenth—or, say, one-twentieth—of a second. There are occasions, of course, when exposures of almost lightning celerity are absolutely essential—to wit, in such experiments as the clever French photo-astronomer, M. Janssen, is wont to conduct. When a direct view of the sun itself is to be taken, it stands to reason that the briefest of exposures is desirable, for a so-called *solarised* image is pretty sure to result. For this reason it is M. Janssen employs a rapidly revolving disc, which is said to open and close the lens in an interval estimated to be as small as  $\frac{1}{2000}$  of a second, and even less. In this way M. Janssen was able to achieve the result which set the astronomical world talking two or three years ago; he obtained upon his plate, not merely a round white disc, such as we are wont to see in a sun photograph, but a disc that contained veritable half-tones all over its surface, showing oval grain-like markings, which changed their form in succeeding photographs, one taken rapidly after the other. In M. Janssen's work, it is not of so much importance to secure a picture at any precise instant—although he is quite capable of doing this with his *revolver*—as to secure rapid exposures, and obtain them quickly one after another. In ordinary photographic work, on the other hand, we hold that excessive rapidity of exposure is a matter of secondary importance, while the means to expose at the proper instant is most essential; while, if it were possible to obtain a *revolver* which was something less than a scientific instrument, so that the photographer at will could give three or four exposures, following rapidly one after the other for brief intervals, such a *revolver* would certainly be a most useful instrument.

We will give our experience of instantaneous work by quoting two instances. The first happened long before drop-shutters were christened, or gelatino-bromide thought of. It was in May, 1866, that we first gained experience in the taking of a torpedo explosion—or, rather, of the effect made upon the surface of water by the firing of a submarine charge. These photographs were taken by means of a stereoscopic camera fitted with a pair of No. 1B Dallmeyer's, and furnished with a simple flap-shutter. Doubts that had been entertained about a short-enough exposure were found quite uncalled for, and the upheaving of the water against the *America* hulk was shown crisp and sharp by an exposure that resulted from a simple turn of the wrist.



Indeed, in the securing of torpedo photographs, in which a body of water appears in the form of a cascade or fountain, rapidity of exposure is, as we have before said, a secondary consideration. The main point is not to expose too soon. It behoves one to wait patiently until the water is thrown to its full height, and as it remains suspended in the air—it is surprising what a long time this really is—to expose then, and not till then. To expose at the time of the explosion would be to get no picture at all. Standing on shore, we have felt through our feet the shock of concussion some time before the time proper for exposing. This, one might almost say, cannot be done too leisurely, for as the American Engineers have demonstrated by actual experiment, it takes sometimes no less than two and a third seconds before the column of water reaches its full height.

In the case of a torpedo explosion, half a second's exposure may sometimes be given—certainly one quarter; but whether it is of the longest or briefest, this, we repeat, is not so important as the time at which the operation is performed. In landscape photography, the same thing holds good. It is but the other day that Mr. England pointed out how necessary it was to be able to expose at the right moment. "One can never tell," he said, "when the particular instant for exposing may arrive. It may be in five minutes, or five seconds. It all depends upon a puff of wind or a gleam of sunshine." Mr. England, we believe, employs nothing but a small drop-shutter behind his lens, and this, albeit we have a battery of shutters at our disposal, is the one that we, too, usually employ. We made use of it in the other instance we wish to bring forward, and although the problem we desired to solve is not likely to present itself in the every-day work of photographers at large, it contained conditions which, in these days of experiment, will require to be fulfilled again and again. The event we speak of was the destruction of a small building by dynamite—an explosive, as most of our readers know, much more sudden in its action than gunpowder. We desired to secure a picture, if possible, at the moment of explosion, and to do this naturally required a little forethought. In the first place, it was necessary to avoid the fall of brickbats and splinters likely to follow the catastrophe, a measure effected by erecting an iron mantelet, such as is employed by volunteers at the firing butts, in front of the building, at a distance of some forty or fifty yards. Two cameras were set up,

their lenses valiantly peeping forth from the mantelet, and their shutters weighted with a few ounces of metal to render the fall rather quicker than usual. The flexible tube, or rather, bulb, was, in each case, held by an observer in the mantelet, who could judge in safety of the time of exposure by looking at a mirror overhead, reflecting the building. In this case, if the exposure had been made at the time of depressing the electric key to fire the charge, the exposure would have been all too soon. A sharp vibration was felt, the building quivered, and then the four walls fell like a house of cards. The bulbs had been pressed intuitively at the first visible motion of the house, and some excitement naturally attended the development of the plates, all being anxious to know what phase of the explosion would be depicted. In the end, it was found that nothing the observers had remarked was photographed; the four walls that had been seen falling outwards were still erect in the picture; but a space of six feet intervened between them and the roof, showing clearly that the first phase of the explosion had been to send this into the air. It was a very good proof, if any were wanted, that dynamite does not explode downwards only, as some wise-acres will keep on insisting. A curious point in the photograph was the circumstance that both observers had exposed at precisely the same period of time, for in each picture was shown a huge splinter in mid-air, flying in the direction of the mantelet. M. Charpentier has told us that a human being can repeat a signal within thirteen-hundredths of a second, and these two negatives bear out that gentleman's statement, for both photographers exposed at the first visible movement, and were equally successful in securing the roof in mid-air and a flying splinter.

The sharpness of the shaken brickwork, as also the débris flying in all directions, proved very plainly that the exposure was a brief one; although we doubt if it were less than one-twentieth of a second. At any rate, it was quite short enough to capture the results of a dynamite explosion, and yet, we repeat, it was secured by a simple wooden shutter, the fall of which was merely accelerated by being weighted. The experiment only wanted one thing to make it perfect; if a revolver of some sort could have been used, capable of firing off a series of exposures quickly one after the other, it would have been possible to depict not only the first phase of the explosion, but every

succeeding one, during the second or two of time that the operation lasted.

There are, no doubt, occasions when photographers desire to work more quickly than in the cases we have cited; but these are exceptional. As a rule, we think their rapid exposures do not include conditions more severe than those of our own experience, and for this reason we shall be surprised if the simplest apparatus for quickly uncapping and capping the lens is not, after all, preferred by practical men.

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## A NEW SCIENTIFIC INVESTIGATION BY PHOTOGRAPHY.

WE have already pointed out how much photography has aided scientific research of recent years—how the astronomer, the chemist, the surgeon, the botanist, the meteorologist, the physicist have availed themselves of the camera in their work.

We have shown, too, that photography does not merely in this connection act in a servile capacity, simply recording fluctuations and changes—as in our observatories, for instance—but that it is also employed for observing the most subtle phenomena and in detecting delicate symptoms which are to be observed in no other manner. In fact, the camera, like the microscope, has of late earned for itself a place among select philosophical apparatus, and has become one of the most trusted of investigating instruments.

Within the last few months one other department of science has been added to the many that have recognized photography as a valuable means of investigation. Mathematicians have now found an important use for the camera, and before long we may expect to see the apparatus in the study of the theoretical man of science, as it is now an indispensable adjunct to the scientific experimentalist. The laws of motion, the theories of Newton, the governing rules of dynamics and statics, over which theory has long held supreme sway, are about to enter the realm of practice, and photography is to demonstrate to us what previously only the mathematician could determine by abstruse calculation. The important function that photography here performs will at once be understood when we mention that many problems and recognized data are based upon calculation alone,



and although the mathematical accuracy of these can scarcely be doubted, it will be with the utmost satisfaction to all men of science to have these experimentally demonstrated, and by such an unerring witness as the camera. Again, it is always possible in a mathematical calculation that, while there is no error in the final result, there may be error in detail—the errors in question neutralizing one another; these, if they exist, photography will at once discover, so that here is one benefit the more that is likely to result from the adoption of the camera by mathematicians.

Most of our readers have heard of the catenary curve—the curve, that is to say, taken by a suspending chain. Knowing the weight of a chain and its length, any mathematician can calculate the curve it would assume, and he could, in this instance, after setting it out, verify his calculation by actual experiment. But there are many cases where the mathematician must rely upon his calculations alone, and is unable to verify his results—at any rate, experimentally. It is so in the case of the trajectory curve, or curve made by a stone flying through the air, or a cannon ball as it is sent on its speedy journey. Two things determine the nature of this curve—namely, velocity and gravity. The resistance of the atmosphere interferes with the speed of a projectile, and this, of course, the mathematician takes into consideration when he estimates the velocity; but it is extremely unlikely, although he may sketch the beginning and end of the trajectory curve correctly, that the intermediate points he sets down are without error. Photography, however, is now capable of depicting this curve, and of showing the mathematician if he is right or wrong in his theoretical result. Thanks to M. Marey's ingenious photographic apparatus, which has already been described in these pages, we are now able to follow the mathematician in his work; we shall be able to confirm many of the beautiful Newtonian laws of gravity and velocity, and no doubt, in many cases, detect errors—they may be but minor ones, but still errors—which, but for the existence of photography, might never have been discovered.

It would be foolish to deny that Mr. Muybridge's instantaneous photographs of animals in motion constitute the germ of this new departure in scientific investigation. M. Marey was one of the first to appreciate the teachings of these pictures, which demonstrate the motion of limbs and muscles in a way that had never

before been imagined. The study of animal mechanics became a new science in the presence of these photographs; and not only in science, but in art, are the Muybridge pictures instructive. For, in the same way as a knowledge of anatomy is, if not imperative, highly conducive to good painting and sculpture, so we may take it for granted that the numerous positions assumed by animals in motion—regarding them, if you will, as a mere bundle of dry facts—cannot but fail to teach the art-student something of the functions of limbs and muscles. M. Marey, who had for some time past occupied himself in studying animal mechanics in birds, at once set about applying photography to his investigation, and, proceeding with his interesting research, passed from the observation of animate to inanimate things. Systematically progressing step by step, he soon forged ahead of his teacher, and now M. Marey is on the threshold of an investigation which is drawing upon him the eyes of the scientific world.

We may here, in a few words, briefly refer to M. Marey's instrument, and to the results he has achieved. Muybridge, it will be remembered, employed for his experiments a series of cameras set up in a row, alongside a sort of race-course, and as



the animal came by, it was successively photographed in these cameras. Across the race-course were stretched very light threads, every one in connection with a camera, and the horse, or whatever the animal was, as he touched these threads, one after another, made the exposure. The consequence was, that in the end, Muybridge secured pictures of the animal in the various positions he assumed while moving. Marey only employs one camera instead of many. Again, instead of using a perfectly white background, as Muybridge did, he uses a black one, illuminating the moving object as brightly as possible. As it would

be very difficult to produce a dead-black screen, Marey uses a darkened recess for background, and his object moves across this. If he kept the lens of his camera open during the whole time the moving object were in the field of his camera, the result would naturally be no well-defined image, but a blurred one right across the plate. To obviate this, the camera is made to expose a hundred times during a second, and thus he gets not one, but many successive images. In front of the camera is a rotating wheel with spokes, which alternately caps and uncaps the lens, and the velocity of this wheel being accurately timed, it permits you to make some very important observations. The motion, during one-hundredth part of a second, is recorded, and to further make the result complete, at certain intervals the spokes of the wheel are double size, so that another check and means of registration is at hand. To indicate the rapidity and completeness with which M. Marey's camera works, we may mention that he has been able to photograph letters and words traced by means of a black stick having a white nob at the end. Spelling his name with this rod against the dark background, while the camera was set in action, he was able to obtain the word "Marey" upon his gelatine plate when this came to be developed.

We publish on p. 115 a wood-cut of one of M. Marey's photographs, the picture representing a man in the act of running. He has now proceeded further, and is engaged, as we have said, in depicting various curves, an indication of which, previously, could only be divined by the aid of the mathematician. Thus the path taken by a stone thrown across the field of the camera is shown on the gelatine plate. The stone is enveloped in a bit of white paper to be as visible as possible, and M. Marey secures on his sensitive film the parabolic curve taken by the stone as it rises and falls in its flight. The photograph secured is not a blurred image, but a clear dotted line, each dot and space representing the one-hundredth of a second. As the intervals of exposure are accurately measured by the spoked wheel, it is possible, therefore, not only to secure in the form of a dotted line the path of the projectile, but to have, as well, a tell-tale of its velocity through every instant of its flight. Thus, in the case of a stone being thrown into the air, the dotted lines appear short and close together at the top of the curve where the velocity is least, while the lines are longer in the photograph at the lower part; that is, where



the stone is rapidly falling. A stone at the end of a string whirled round by a person alternately standing still and walking forward, has also given some instructive photographic records, which are likely to explain something more than we know at present of the laws of motion.



M. Marey has also been successful in taking several pictures upon one plate of a white horse leaping over an obstacle.



M. Marey has so far, of course, only entered upon the threshold of this interesting investigation, and what he has done is only preliminary to a more exhaustive research. Still, the

novelty and interest of the results already obtained are very great, and we may look forward with confidence for some remarkable disclosures from M. Marey's ingenious photographic apparatus.

### LANDSCAPES AND PORTRAITS.

A PHOTOGRAPH must be either a landscape or a portrait. So, at least, most people were wont to think, even if the majority are not of the opinion still. Medals were given for landscapes, and medals were given for portraits, and photographers were usually classed as pre-eminent in the one branch or the other. Some ten or twelve years back, it is true, another term came into general vogue—worse luck to the photographer who aimed at making pictures—and *genre* prints began to be spoken of. *Genre* is an indefinite name at best, but it was thought sufficiently appropriate for work undertaken by photographers who could not make up their minds to produce a portrait pure and simple, or a photograph of land and water. The estimation at which a *genre* picture was held is easily gauged by looking at the prospectuses of bye-gone exhibitions held in London and elsewhere. If a dozen medals were set apart for portraits and landscapes, a single one was deemed sufficient for the new class of picture; or, if gold and silver medals were proclaimed at the awards in the recognized branches of photography, the *genre* pictures were set down to divide a bronze medal between them.

We do not know if those who introduced the word *genre* photograph attached any specific meaning to it, or whether, as is indeed most likely, it was simply borrowed from the painter's vocabulary. It is a little difficult to define what a *genre* painting is, for authorities are divided on the subject. Thus, while one author tells us that "*genre*" is applied to "various branches of painting except history and landscape," another says that *tableaux de genre* are paintings of interiors, and adds gratuitously that they are called so *d'une manière fort impropre*. Again, a third definition is, that a *genre* picture is one that tells a story. Still, all agree in this, that a *genre* picture is a picture, and not a mere representation of a bare fact or phenomenon.

Therefore, if we have adopted the word from painters, a *genre* photograph means a pictorial photograph, and instead of being at the bottom, it should be at the top, of the departments of photo-

graphy. This is a home-truth that photographers will be bound to recognize sooner or later; and, indeed, in the case of the Photographic Society, the matter is, we are glad to see, half-recognized already. We mean that, instead of separating the pictures in the Exhibition into classes, they leave it to a jury to award medals as they please to the most deserving exhibits. In other words, in an art exhibition, only one standard is employed, namely, that of art. Whether the pictures exhibited year after year on the walls of the Pall Mall Exhibition have much or little to recommend them in the way of artistic treatment, it is only according to the standard of art that they can be judged; and even those critics who deny that any photograph can possess even a modicum of artistic feeling can, at any rate, say which pictures are least offensive to good taste, and award the palm to these.

In speaking thus, we are, of course, only alluding to the general pictures in an exhibition, and not to those having special qualifications to recommend them, and whose appraisal comes under the notice of another class of judges. We speak of photographs as pictures, and we say that in future exhibitions it were well indeed if the words portrait, landscape, and *genre* are altogether ignored. Very soon after photographic exhibitions were established, a notice was issued that *carte-de-visite* portraits were not desirable, and that, if forwarded, only a limited number would be admitted. It would be wise if the same rule applied to cabinet portraits as well; for exhibitions, although established for the benefit of photographers generally, must have some limits imposed, else the collection would speedily degenerate into a number of ordinary show-cases. In the ordinary every-day work of the photographer one is less interested than in his endeavours to progress as an art-student, or as a pioneer in art-photography.

To show sterling work is the object of an exhibition, and whether this is in the form of a simple landscape, or portrait, or study, or interior, so long as it has pictorial merit, it is welcome; and a man who achieves a photograph of merit, and forwards it for exhibition, it should be remembered, not only increases his own reputation, but the repute also of photography in general. We need not dwell upon the fact that photographs which were neither pure landscapes nor pure portraits have been much neglected in our exhibitions. Everybody is perfectly aware of the fact. They have not been admitted to the same advantages



as portraits and landscapes. We do not mean that the latter have been overrated, or that they have not the art-qualities the so-called *genre* photographs possess; on the contrary, there have been, as a rule, more art-feeling and good taste displayed in these branches than in many *genre* prints, for the simple reason that in creating a pictorial photograph, most photographers fail. What we ask is, that all shall compete on the same platform. If this is not done, we foresee the approach of much controversy and endless wrangling. Who shall decide that a photograph belongs to this class or that class? The bust of a lady is decidedly a portrait, and a group of trees upon a sloping lawn is decidedly a landscape; but let the lady be reading a letter, or the landscape have a figure gathering sticks in the foreground, and what are the pictures then? Some judges would say that the portrait is still a portrait, notwithstanding the letter, and the landscape has not altered its character. But what if we give the pictures a title, calling the first "Is it True?" after Rejlander's admirable study, and the second "Harvest for the Winter;" do we change them into *genre* pictures in that case? Only the other day we had an illustration of the difficulty. Mr. Pettit's picture, which secured one of the awards at the Edinburgh Exhibition, is stated to be the only landscape that secured a medal. This is nonsense. Mr. H. P. Robinson, of Tunbridge Wells, had the gold medal awarded to him for a picture which was as much a landscape as anything by Turner, Wilson, Linnell, Calcott, or any other distinguished landscape painter.

Some photographers are content with landscapes pure and simple, while others think that life and animation are imparted by one or more suitable figures. But in any circumstances the introduction of figures should not be regarded as a cause for relegating the productions to an inferior class; yet this is what has been done time after time in our past exhibitions. The hanging committee, or the jurors, have taken upon themselves to say which is a *genre* picture, and which is not, and these productions have been arbitrarily put on one side and thrown out of competition, although representing the application of consummate taste and rare skill, and just in that direction, too, in which efforts are most praiseworthy. To take an example, we may put forward, with little fear of contradiction, all Rejlander's studies as belonging to no other class but that of so-called *genre* photographs. There was a story in every one of Rejlander's pictures.

"Homeless," a ragged beggar-boy asleep on a London doorstep; "Did She?" where a laughing face listens to a humorous story; "Grief," "Despair," "Resignation," and other female studies, would but be regarded as *genre* photographs according to present regulations, and entitled to compete only in a class where the prizes are fewer and of less value than those accorded for pure landscapes and portraits.

We have already pointed out the folly of giving medals for portraits as portraits, since a judge cannot form a true opinion on the subject unless he has the models themselves before him; whereas, if he regards the photographs as studies, then all competitors are on the same footing. We hope that the day is not far distant when neither "portrait" nor "*genre*" photographs find a place in the prospectus of an exhibition, and that, whatever the nature of the photograph, it will be judged by its pictorial value. There would be no harm in dividing pictures into interiors and exteriors; but, as a rule, the fewer attempts at division, the more likely is a spirit of fairness and good faith to prevail.

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## PHOTOGRAPHIC PRINTING BY THE ELECTRIC LIGHT.

SOME experiments we have recently made in printing with the electric light may have interest for our readers, albeit they are not likely, at any rate for some time to come, to resort to electricity as a general printing agent. As many of our readers know, photographic printing is no novelty. A dozen years ago, when the Woodbury Printing Company were installed at Hereford Lodge, Kensington, a powerful magneto-electric machine found a place among the apparatus to be employed for printing the gelatine tissue when lack of daylight might otherwise bring work to a standstill. The power of this light was, if we remember aright, about 1,200 candles; it was frequently made use of, but we believe, in the end, that daylight was found quite sufficient to produce all the gelatino-reliefs needful, and consequently the more expensive method of light-making fell into disuse. Compared to sunlight or daylight, this electric lamp was very weak, for at the short distance of eighteen inches from the carbon points, chloride of silver paper was blackened but slowly; indeed, the actinic power exerted was reckoned to be but  $\frac{1}{24}$  that of sunlight on a summer's day.

Another photographic use has, however, recently been found for the electric light. The importance of photo-etching to the publishing trade has caused those who undertake such work to avail themselves of electricity for taking negatives, and also for printing upon gelatine paper to secure the necessary transfer. Any picture or engraving in an illustrated paper may be copied by the photo-etching method without difficulty, and a publisher eager to reproduce an illustration from a foreign paper may have an engraving block in his possession within twenty-four hours of snipping out the print with a pair of scissors. Nay, in some cases, a firm will undertake to deliver the printing-block in three hours. The chosen print is set up flat on a drawing-board, the electric light is directed towards it, and a negative—the wet collodion process is still generally used—is taken in a few seconds. The plate is quickly intensified, put into the printing-frame, and, if it is night time, printed by electric light. The transfer is then made, it is laid successively upon stone and upon a zinc plate, and the latter finally etched in acid.

In some cases enlargements are made by the photo-etching process to serve as placards, the size of the original print being multiplied to monster dimensions.

Of the employment of the electric light for taking negatives in this way we shall speak at some future time; on this occasion we confine ourselves to discussing its action upon chloride of silver paper, and paper treated with salts of iron, as in the Herschel or Pellet process. To get printing power sufficient for practical purposes, it is necessary to have an arc light of considerable energy, and to employ the direct rays. In producing portraits by electricity, Van der Weyde and others who have followed in his footsteps, although they, too, employ powerful arc lights—from 6,000 to 10,000 candles—do not use the direct rays, but shield these from the sitter by a saucer placed immediately under the source of light. The rays are cast upwards against a parabolic reflector, fashioned like a huge umbrella, and then reflected downwards upon the model. In printing, there is nothing to be gained, but, indeed, much to be lost, by getting rid of the direct rays, and hence the plan usually adopted is to employ the naked light, with a sheet of white paper or other simple reflecting surface behind it.

The light with which we made experiment was of 6,000 candle power. It was a lamp of Messrs. Siemens' construction,



worked by a dynamo of their make, which required for its driving an engine of four-horse power. It was our object more especially to ascertain whether the electric light could be employed with any degree of success for printing tracings, and diagrams by the Pellet process, which, compared to silver printing, is somewhat slow. In fact, it would not be far wrong to set down the comparative sensitiveness of silver and iron as represented by the figures 4 and 1.

The distance at which we tested the light was five feet from the carbons. Distance, as everybody knows, plays a very important part in photometric experiments, the intensity of the light decreasing as the square of the distance; so that at  $2\frac{1}{2}$  feet from the source of light, this would be four times as powerful as we found it at 5 feet. We chose the latter, however, because tracings and drawings are frequently of large dimensions, pressure frames from 4 to 6 feet in length being sometimes employed in this branch of photography. By placing these upon a movable stand, so that the printing-frames are not at rest during the printing, the electric light, even when direct rays are used, can be made to print with uniformity.

A light screen graduated in squares from 1 to 25, such as Mr. Warnerke has recently introduced, was used for making the test. Employing chloride of silver paper to print upon, it was found that in fifteen minutes the number 20 was faintly legible. Unfortunately, the fixing bath dissolves away a faint image very completely, so that the result was only equal to a pale 15 in a fixed and washed print. We are not able to say how quickly a summer's sun would produce a similar print, but on a fine day in mid November at noon, with the sun shining, two minutes and a-half was sufficient to give a like impression. With the sun behind the clouds on the same fine day, and also about noon, ten minutes were necessary to secure what the electric light furnished in fifteen minutes. So we may take it that a 6,000 candle arc lamp, at 5 feet, gives from half to two-thirds the light afforded by an autumn day at noon without sun, while in the sunshine six prints could be got off, for every one by the electric light.

At two and a-half feet distance, we should get very much quicker results; the printing would go on at least twice as quickly as on an autumn day without sun; but in order to get a light as intense as autumn sunlight, the printing-frame would have to be placed at a less distance than two feet.

Printing by the electric light is, therefore, decidedly practical, if it is only worth while to employ it. We have said that chloride of silver paper is about four times as sensitive as the iron process; and, practically, we found that half-an-hour was necessary to produce a Pellet print—that is, employing an ordinary draughtman's tracings in place of negative—at a distance of five feet from the carbons. With a little management, several big frames may be set printing at one time around an electric lamp, and by changing their places during exposure, the printing action proceeds with considerable evenness over the whole surface.

It is, however, only for special work, obviously, that electricity can be used for printing, since the expense of a powerful light is considerable. Still the advantages are many, especially when it comes to printing with iron or bichromate salts, as in the case of making transfers for the photo-etching process. In both cases, it is impossible to judge with the eye alone as to the progress of the printing. Now, as the illumination from an electric light is practically constant, it is only necessary to reckon by time in order to get a print of the right character. One of the greatest difficulties in both the iron and bichromated gelatine processes is thus overcome, and it is possible, with a little care and attention, to produce prints one after the other in succession, all of the same nature as regards depth of printing. The same holds good in the making of negatives in the camera with the electric light; given a certain distance from the object to be copied, a certain lens and a certain diaphragm, the exposure may be reckoned with accuracy, provided, of course, the sensitive film is to be trusted.

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## EXPRESSION.

EXPRESSION in portraiture—"there's the rub." A model may be represented well-posed, well-lighted, admirably draped with brilliant shadows and soft detail, and yet be withal a dread failure, should the expression be wanting. It is the wreath that crowns the work, and distinguishes good portraiture from bad. It is of no avail to be the most skilful of manipulators, to have exquisite taste, to possess a keen eye for effect; if the

under-lip falls at the moment of exposure, and a set, wearied look creeps over the face when the critical moment arrives, all your talent and labour are in vain. Indeed, the skill and taste you have bestowed go rather to make matters worse; and the critic's cry of "What a pity!" comes out unhesitatingly when he beholds so much good work cast to the winds.

Every photographer has his own way of treating the sitter; but whatever it may be, if the model is not at ease, there is little chance of securing an agreeable expression. A man's portrait is more easy to get than a woman's, for the simple reason that most men wear hair upon their faces, which in a manner masks the expression. It is around the lips and mouth that the greatest mobility exists, and when these are covered by a moustache, the expression of the lower part of the face does not apparently alter. Indeed, it is said of some men that they take their expression from their beards. A man who has beard and moustache falling downwards in one line, from continually seeing himself grave and stern-visaged, lives up to his beard, and grows solemn, or, at any rate, makes belief to be so. Nobody ever sees him smile, and after a while he ceases also to laugh. In the same way, we are told, the exquisite with whisker and waxed moustache maintains for life the cold and superlative air he first assumed when he began to take so much pains over the cultivation of his hirsute appendages; he becomes so accustomed to the mask he wears, that, after a time, it ceases to be a mask at all. How much truth there is in all this we do not know, but certain it is that the beard governs the outward expression of the mouth, and therefore of the face, in a marked degree. An actor with a beard is never satisfactory; we like to see the full play of his features, and the most important of these are hidden if the working of the muscles around his mouth is not visible.

Anyone who will examine but cursorily the anatomy of the human head, at once sees that the muscular system is centred in the mouth, and for this reason it is that the mouth plays such an important rôle in expression. It may be said, in fact, that if the photographer secures an agreeable expression of the mouth, he has done all that is necessary. The "saintly look about the eyes" is but a figurative expression, and has no real existence. There are muscles over the eye-brows, it is true, which concern expression; but the eyes themselves cannot express either joy or sorrow. They seem to laugh or cry according as the mouth



muscles act ; and it is impossible to say whether a model is sad or joyful if you only see the top half of the face. The late Professor Partridge, of King's College, who was for several years professor of anatomy at the Royal Academy, found it very difficult to get his students to believe that eyes could not flash fire, or languish with sweet melancholy. His painter-pupils were so deeply impressed with "the expression of the eyes," that it needed all the worthy Professor's tact and tuition to convince them to the contrary. To Professor Partridge, indeed, the Royal Academy is much indebted for the sound teaching in anatomy which the establishment enjoys to this day. The plan he adopted to convince the art students of the fact he wished to inculcate—for anatomical drawings did little to advance his dictum—was to exhibit a picture of a face, the lower half of which could be replaced either by a mouth wearing a sad expression or a laughing one. He was then able to show that by simply altering the lower part of the face, the eyes would appear to twinkle with delight, or assume that "saintly look" about which we even now hear a great deal.

Care or pain are at once expressed by relaxing the muscle of the lower lip and allowing this to fall, just as readily as a laugh or grin is produced by drawing in the muscle which is in a line between mouth and ear, and is termed the laughing muscle. It does not require human agency to move these muscles and produce expression ; this can be done just as well by electricity, as Duchenne, the French physiologist, has shown. Duchenne published in 1862 a work on the mechanism of human physiognomy, which was illustrated by a series of very telling photographs ; in this he showed how, by contracting certain muscles by an electric current, the features of a dead man could be made to assume the various expressions as in life, and, in a word, he produced a very good semblance of the different emotions by merely contracting or relaxing the muscular system of the face. This is a circumstance that retouchers should bear in mind, otherwise they may thoughtlessly remove from a laughing face the outline of that muscle's action which produces the laugh.

It is the lowering of the under lip that, in nine cases out of ten, mars a photographic portrait, when it is marred, and no skill of the retoucher can set matters right again. For this reason one always endeavours to keep the sitter in a humorous

mood, for so long as the risible muscle is braced up, there is no tendency for the lower lip to fall. Indeed, the falling of the lip only happens when the sitter is left to himself or herself, when perhaps the operations of posing and lighting have lasted too long, and the photographer's stock of lively conversation has come to an end. Fritz Luckardt has a predilection for English sitters, because he says that while they are quiet, they generally smile, the prominence of the front teeth, to be observed more especially in the Anglo-Saxon race, being conducive to a bright expression. But when they leave off smiling, and are no longer animated, then the British model ceases to be a favourite, for, says our excellent Viennese artist, as soon as the lower lip falls, the teeth are disagreeably prominent, and we get the jaded—almost painful—expression that one wants so much to avoid. The corners of the mouth sink, and then good-bye to the cheerful expression.

Some photographers occupy themselves with a sitter for half-an-hour, and in this way seek to win the confidence of the model, and to set the latter at ease; while others believe that the visitor should not be introduced into the studio till the last moment, and then by doing the work briskly they do not give a chance for any feeling of weariness or fatigue. By both plans, no doubt, success may be obtained, and certainly it is impossible to lay down any law by which all photographers can act. Both the qualities of the artist and of the tactician are requisite in conjuring up a happy expression, and catching it upon the sensitive film. But if it is the most difficult of all to obtain, we should remember that it is most valuable.

It is expression that makes the difference between a photograph and a painting, and causes the former to be prized so highly when the original is gone far away—perhaps to that bourne whence no traveller returns. A photograph with a happy expression is not merely a portrayal of features, a representation of somebody; it is the man himself, with speaking lips and glowing cheeks, as he lives and moves and has his being.

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## POISONOUS CHEMICALS.

THE subjects of poisons is attracting the attention of the legislature once more, and we shall scarcely be surprised if photo-

graphers are not in the future a little more hampered in respect to their supplies of such chemicals as are notoriously of a poisonous character. There are three classes who suffer from poisoning: those who swallow poison inadvertently, those who swallow it designedly, and those who swallow it because it is administered to them. The second class can hardly be protected by the law, and in the case of the third, legislation also is of slight avail if the would-be poisoner is a person of intelligence; all that can be done is to make the acquisition of poison a difficult and circuitous proceeding, which may reduce casualties, but cannot prevent them.

In the photographic world, and indeed if we take the gross number of poisonings, it will be found that by far the majority of deaths are those of suicides. A man or woman does not commit self-destruction because it is easy to obtain cyanide of potassium or other noxious drug, but because he or she is tired of life, and desires to quit it. The instrument by which the deed is committed is of no importance when once the deed has been resolved upon. And yet, to hear some people talk, it is due simply to the ready way in which poisons are to be purchased that we have so many lamentable suicides. Granted that poisons are easily acquired, the taking of life by their means is still more difficult than most others available; a water-butt or reservoir is never far off, and knives and razors are everywhere. Again, even if the sale of such virulent poisons as cyanide of potassium, strychnine, aconitine, to name a few of the popular bodies, was interdicted at this moment, poisoning by an intelligent person would be no more difficult. For instance, there cannot be a simpler means of procuring poison than the distillation of a few laurel leaves, and this, as well as a dozen other ready modes, suggest themselves to a poisoner of intelligence.

It is only, in truth, the person who gets poisoned by misadventure who can be protected with any success by the law, and certainly no effort should be spared to render that protection as efficacious as possible. It has been our sad experience to witness an accidental death from swallowing cyanide of potassium; and only those who have seen the rapid way in which the victim succumbs to the fell poison can believe how slender is the chance of survival. Photographers would be careful, indeed, of their store of cyanide had they seen what we have seen. Within three minutes of the solution passing the lips, the jaws were



locked, the teeth rigid, and the patient in a state of syncope. It was the case of a young man who assisted in the laboratory, and who had by him a small bottle of cyanide solution kept for the purpose of cleaning silver. He had also on the same shelf, in the same cupboard, a bottle of orange bitters, and of this he was in the habit of drinking a glass just before dinner—on an empty stomach, therefore. One day he chose the wrong bottle, poured out a dose, and swallowed it. He had barely time to remark upon its nasty nature, and to look at the bottle from which the dose had been poured; before he could reach the yard, whither he desired to go for the purpose of vomiting, he fell down paralysed. What he had swallowed everybody knew, and quick as thought some sulphate of iron was fetched from the laboratory by way of antidote, while a messenger was despatched to a medical man close by for the stomach-pump. But neither the one nor the other could be employed; the jaws were so firmly closed that ordinary means failed to sever them; and when subsequently, after much delay, the mouth was opened, the patient was beyond all hope.

Most photographers are aware that little can be done to restore a patient poisoned with cyanide of potassium. Iron salts quickly administered exert much beneficial effect by combining with the poison, and forming the more harmless and well-known Prussian blue. Chlorine water with a few drops of hydrochloric acid added is also recommended; but really no antidote will avail until the stomach is cleared of the greater part of the poison, either by an emetic or by the stomach-pump. Many people can bring on vomiting at once by placing the finger as far down the throat as possible, and this is a most invaluable specific, whatever the noxious drug that has been swallowed. In some laboratories it is customary now-a-days to have emetics in bottles at all four corners of the apartment, so that they are ready to hand at a moment's notice. Those who would adopt this expedient will find a solution of sulphate of zinc most handy for the purpose. Sixty grains of the sulphate dissolved in two ounces of water makes an effective emetic.

Fortunately, the neutral potassium oxalate, with which photographers have recently grown familiar in the development of dry plates, has not the poisoning properties of oxalic acid. It does not possess the irritant character of "salts of sorrel," and may indeed be excluded from the category of poisonous chemicals

with which the photographer has to deal. Next to cyanide, indeed, among the photographer's paraphernalia, comes pyrogallie acid, which is a most terrible irritant, and for which also no proper antidote can be prescribed; a speedy emetic is here also the wisest of measures. Bichloride of mercury, or corrosive sublimate, as it is commercially termed, is more easily prescribed for, since it forms with albumen an insoluble compound; for this reason a patient who has swallowed a solution of this mercury salt should at once be dosed with raw eggs, or, failing these, with milk or other liquids containing albumen. The mineral acids—such as nitric, sulphuric, and hydrochloric acids—are all of them reckoned poisons, and we may mention that it is not so long ago that a janitor engaged in removing the débris of a broken bottle of nitric acid was so poisoned with the red nitrous fumes that he died from their effects. The antidotes for these acids are the carbonates of soda and magnesia, the former of which is usually to be found in every photographic laboratory. The same antidote may be administered to counteract poisoning with bichromate of potash solution, a most painful irritant, which affects, as most carbon printers know to their cost, the skin very acutely, if the fingers come frequently into contact with the solution.

Nitrate of silver is employed by the surgeon as a caustic for burning bad flesh and sloughing wounds, and its characteristics as an irritant may therefore be guessed. Its burning properties are, however, at once allayed on the addition of common salt, which converts, as every photographer knows, the nitrate into chloride; hence a solution of common salt is the best antidote one can administer in the event of poisoning by nitrate of silver.

Strong ammonia is dangerous enough when there is much of it. We have seen an assistant rendered insensible by the simple turning over of a bottle into the sink, while at another time we remember a bottle of the same volatile liquid breaking in a passage and thus cutting off all communication between the ground floor and the first floor. The dashing of cold water over the patient and the administration of acidulated water is the most efficacious treatment in these circumstances, while no time should be lost in bringing him into the open air, where his lungs can breathe a fresh atmosphere. The inhalation of ether and alcohol fumes to an injurious extent may be counteracted by similar treatment; but, fortunately, there is not so much to fear from these, now the wet process is not so generally practised.

Chlorine, iodine, bromine, and their compounds, may also be regarded as poisonous; but the photographer and his friends are less likely to suffer from them than other bodies we have named. The caustic alkalies are also poisonous to a degree, but hardly likely to prove dangerous. In the YEAR-BOOK OF PHOTOGRAPHY Mr. V. Elsdon has tabulated the noxious drugs in the photographic laboratory, and has set down not only the antidotes for them, but also the characteristic symptoms, which all our readers will do well to study. The subject is indeed a most apt one for the pages of the YEAR-BOOK, for this little manual is usually kept in the laboratory convenient to hand for reference. Mr. Elsdon also points out the quantities of the various bodies that have been known to produce fatal results, and shows plainly that in some cases a very minute dose suffices to bring about death. Thus, three grains either of cyanide of potassium or bichloride of mercury have been known to produce fatal results, and it is of these two compounds the photographer, therefore, should best beware. So highly dangerous, indeed, are these compounds, that we think in large photographic laboratories the charge of them should be entrusted to one individual only, who is held responsible for their safe custody. It is hardly right that when young lads and girls are constantly employed, these deadly compounds should be in the way.

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## JUDGING PICTURES AT EXHIBITIONS.

PROBABLY more complaints have been made on the score of judging pictures, than on any other point connected with photographic matters. The importance of such complaints may not have been very great years ago, when competitions were few and far between, and when the Photographic Society of London was the only body that distributed medals with any regularity. But things have greatly changed since then. The chief cities of the United Kingdom are organising exhibitions and competitions in all directions, and every year sees several series of medals distributed. Bristol, still jubilant over the success of the meeting held in that city two years ago, has but lately published the terms of a fresh tournament, to which photographers from the length and breadth of the land are invited. In the far north,



Dundee has during the past twelvemonth made a lavish distribution of gold, silver, and bronze pieces; while Edinburgh, but the other day, made similar awards to the chosen among their recent exhibition. In London the annual exhibition has been, as usual, the signal for the bestowal of a handful of medals, and those who are frequent exhibitors have as much as they can do to despatch their frames to the various gatherings one after the other.

In these circumstances it is obvious that judging pictures has become a matter of very serious import. It is not enough that medals are distributed impartially, and to the best judgment of those who have the awards in their hands; it is necessary that the judges, whoever they may be, shall have the full confidence of the exhibitors, or, at any rate, of the members of the society which holds the exhibition. To say that the judgment given is to the best of the judges' ability, is not much, if those interested have not full faith in the intelligence and experience of the judges. So far as our own observation goes, we have never met with gentlemen on a jury or award committee who have not striven, not only most earnestly to do their duty, but who have not entertained a most exalted estimate of the duty they had to do. That they have often failed to do full justice is equally true, for the simple reason that full justice was impossible under the circumstances. Complaints have followed the decision of the judges as surely as the awards have done, and except in the rare instance of the last Edinburgh competition, signs of dissatisfaction have been evident, so far as our memory serves, on every occasion of a photographic competition for medals.

The case of the Edinburgh Society leads us to our text, and we ask at once, would it not be well to give the plan recently adopted in the Scottish capital a trial at other societies? Briefly, the method consists in letting the members of the society award their own medals, and if the voting is conducted by ballot on approved rules, every individual member is responsible for the aggregate award. The plan, apart from other obvious advantages, has one which has been little studied, but which would not be lightly esteemed by the minority whom it affects. We mean those gentlemen who are called upon to act as judges.

It must frequently be a source of pain to them, after they have finished their thankless task, to find themselves accused of favoritism, partiality, and other offences still more venial. In

nine cases out of ten they have not desired the unevitable office thrust upon them, and very frequently, when they relinquish it, it is with a determination never to serve again. Whether they were fitted or unfitted to discharge the duty was a matter not for them, but for those who nominated them, and we say most advisedly that now photographic competitions are so frequent, it would be a boon indeed if gentlemen who act as judges could be relieved of the hard things said of them at the close of their office.

No doubt the plan of voting needs to be a good one. It is not enough to place a single name on a ballot paper in order to get at the popular vote. When the Athenians were asked to choose a successor to Aristides, they were directed, if we remember aright, to set down two names—that of the person they thought best suited to the post first of all, and afterwards, he whom they believed to be second-best. The result of the voting was not unexpected; in the first category the voters had placed their own names, but as second man they set down the name of their favourite general, Themistocles. The Edinburgh Society wisely acted after the same manner. They did not ask which picture should have the gold medal, but requested instead, the number of the pictures to be placed in order, according to the esteem in which the voter held them.

At Edinburgh, every member of the society had a ballot paper, and had as many votes as there were awards to be given. There were five printed spaces marked respectively 1, 2, 3, 4, and 5, and the voter filled into these the numbers of those pictures he held to be best, second best, third, fourth, and fifth. If a man feels sufficient interest in photography to join a society and pay a yearly subscription, the chances are that he will take some pains to look at the pictures on the walls of an exhibition, and use his vote both with discretion and judgment. It may, of course, be that there are unscrupulous members, and it may be, too, that there are members who are biassed in favour or to the prejudice of certain exhibitors. Of the favoritism or prejudice, such members are, very possibly, quite unaware, but it may exist nevertheless, for benefits and grievances, long forgotten, frequently leave a shadow behind. But, take it that several of the voters do have a predilection for a certain photographer's works, and recognize it on the walls, this has little influence on the aggregate vote, even if we suppose that half-a-dozen or even

a dozen individuals—an almost impossible contingency with the ballot—act together. For one of the first rules adopted would, no doubt, be to the effect that unless a certain proportion of votes were given, no medal could be taken. That is to say—to come back to our old friends the Athenians—the personal voting in the first space, which might confer a few votes on some individual, would be disregarded if in the second space the number of voices raised for a competitor were overwhelming.

It is scarcely likely, perhaps, that the same unanimity that prevailed in the ballot at Edinburgh will soon be repeated, but this unanimity, it must be remembered, was as much due to the impartial mode of voting, as to the high excellence of the chosen pictures. This is proved by the fact that all the chosen works were represented by seventy-five per cent. of the votes given. In other words, the awards were made with the full concurrence of three-quarters of the members. In the case of the first award—the gold medal—it turned out that whether you took the picture mentioned most frequently in No. 1 space, or in the two first spaces, or in the three first, or four first, or all five, the result was the same, and hence there could be no question as to the justness of the award. If only the first place is taken into consideration, we may, of course, sometimes encounter the result the Athenians got; but whether or not personality is traceable therein, it is very certain that the sum of the other spaces would give a most satisfactory reading.

At the same time the voting in space No. 1 must of course have a true value set upon it. This could be done in a variety of ways. We do not know how the matter was managed in Edinburgh, but the spaces might each of them have a specific value, which gradually decreases. If ten medals were given, the first space might count ten, the second nine, the third eight, and so on, when it would be an easy matter, by adding up the different votes given to a certain picture, to estimate the value in which it is held by the members of the society. The total would express this at once; and if necessary, there might be a provision that no picture obtaining less support than that of half the members voting should have any medal at all.

The advantage of the system is, that the judging of pictures becomes impersonal instead of personal; the character of the judges could no more be assailed than the verdict of the ballot papers. Further, all members of a society—the quiet unobtru-



sive individuals, as well as those who are generally to the fore—would have a voice in the judging, and hence it is likely to be as far as possible free from human error.

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### ABOUT SOME STUDIOS.

ONE of these days we propose to begin a series of papers upon studios looked at from the point of view of the public. Our "Studios of Europe" series, which we have by no means exhausted, has, we think, informed our readers on divers matters, and on the whole, we hope, has been invested with some interest; but, from the nature of things, the information they gave was occasionally very one-sided. While it is always well to know what is passing behind the scenes, the actor in a drama is as interested as any of his audience can well be, to know how the play looks from the front. Indeed, to carry the simile further, we find that tragedians and comedians, when a holiday is vouchsafed them, usually spend it at the play-house to see how the public take this scene or that; how they appreciate this style of melodrama, or that strain of humour.

In like manner we think photographers are interested in "the front of the house," as well as in studio, laboratory, and dark-room. If they learn how the drama is enacted by other managers, they can tell how far they are right and how far wrong in their own method of working. For, as we have pointed out more than once in our vagaries in these pages, a photographer may be the best artist in the world, and yet fail to make a living, if he lacks tact and business ability. Let a theatrical manager produce nothing but the purest and most classic plays he can find, and get them performed by the ablest actors, and he will find his benches forsaken, and his treasury empty, unless he is cognizant with the ways of the world, and exhibits tact and discretion as well as the legitimate drama. Opinions are divided upon the subject of Mr. Belt's talent as an artist; but whether he is a good sculptor or a bad one, there is no doubt about his business ability, about his good fortune in securing commissions, and getting lucrative work. We have no desire to see the business side of photography elbow from the front artistic training and cultivated genius; but still we must repeat that, if a man

wishes to gain more than his bread and cheese in this world, it behoves him to learn something of the world by which he is to live.

Now, one point that generally strikes us upon entering a studio is the unnecessary grandeur and size of many of the pictures and paintings on the walls. When a customer enters a studio in which something more is demanded than the popular price of five shillings for a dozen cartes, he naturally expects to find a reception room and *entourage*—if we may be permitted the word—something above the ordinary stamp. It is the way of the world. You do not pay a guinea or two guineas to consult a medical man who lives in the New Cut or Whitechapel Road; if you pay this sum, you somehow expect it will be at a well-to-do house in the West—in Saville Row, for instance, or George Street, Hanover Square. And the medical man, be he surgeon or physician, knows this just as well as you do; for the guinea or two-guinea fee you pay, you not only require first-rate advice, but given in a first-rate locality. The advice would be just as valuable if you had picked it up in Lambeth or Whitechapel; but as it is not the way of the world to purvey high medical opinions in those localities, we have come to look upon the two things as inseparable. So it is with photographic studios, and everything else of a like nature. When a customer makes up his mind to spend half-a-guinea, a guinea, or may-be two or three, upon a portrait, he anticipates a studio in a nice locality, comfortably fitted, and with a reception room in which he may pass a quarter of an hour looking at pictures and specimens. Now, so far as concerns the fitting up and furnishing of well-to-do studios of this nature, we have nothing to say. We have, in our time, visited a large number of them, and the taste and style of the reception rooms generally deserve high praise. Photographers, in a word, are quite alive as to the necessity of treating the public as it should be treated, when it is asked to spend money, and the only word we have to say on the subject is relative to the question of overdoing a certain feature of the studio. One wants to impress a visitor, and to show that he need not fear an inadequate return for his money; but it is also necessary that one's endeavours to please should not be misunderstood. And this, we fear, is sometimes the case, when he perceives on the walls so many grand and highly-burnished portraits, so many big, heavily-framed pictures that over-

whelm, rather than impress him favourably. The bigger portraits, too, are generally coloured, and the consequence is, the visitor begins to fancy he has entered the room of a picture-dealer rather than that of a photographer. That the pictures in question are often painted by artists of high ability and finished in exquisite taste—indeed, as we know, the painter's fee is frequently fifty and a hundred guineas—is not to the point; in fact, the better they are, in a sense, the more prejudicial may be their primary influence. The customer has walked upstairs with a view to paying a guinea fee, and securing a dozen *carte portraits*, or perhaps half-a-dozen cabinets; he does not like to think his order is a petty one, and that his payment looks mean. He is ready to spend his money like a man, but has no idea of parting with it in misery fashion. He would far rather go to some more modest establishment where he would be appreciated, if he is in the way, for there is scarcely a specimen of a small portrait to be seen, and but one or two cabinet pictures; the collection he views is made up of magnificent portraits with grand titles, and fine, life-sized paintings. The lady-attendant, may be, is politeness itself, and will insist, when the customer hesitatingly puts forward his modest demand, that the firm will be most happy to execute it; but even if she wisely desists from exhibiting the qualities of the bigger and more expensive pictures, the customer is not set at rest by her assurances. The impressive grandeur of the collection has been too much for him.

To put the matter briefly, there has been of late too much disposition to suppress the *carte* and smaller portraits in the reception room. The newer, grander *formats* are permitted to take up all the room. In Paris, this plan is even more marked than in London; and in one studio we recently visited there was not a single specimen of the *carte-de-visite* to be seen. Far be it from us to inveigh against novelty or against attractive modifications in any form. But do not run upon Scylla while avoiding Charybdis. The demand for small portraits is still very great; and there is a large class—among middle-aged men—who think very decidedly that the smaller they are photographed the better. These are quite willing, too, to part with their money, though they are exceedingly shy—more, perhaps, because they are afraid of being laughed at by their relatives than from any other reason—about anything that might be charged to their vanity or to moral weakness.



We are quite aware that, in nine cases out of ten, the grand pictures to which we have referred are put into the studio reception room more for the purpose of furnishing it, or providing the visitor with something to look at, and that if he wishes, he can ask their price, and if not, he can walk downstairs without another word. All this we are cognizant of, just as much as we know that it is absolutely necessary to put your wares before a stranger, if he is to see them at all. But our point is, that the small portraits are ignored in the anxiety of the photographer to put forth his most costly work; and this step acts not unseldom prejudicially upon the customer. It is the lesser, not the greater, that should be employed to attract the customer when he first enters the apartment; this is by far the surest way to win his confidence, and, when the end is obtained, you can easily keep it. An apt instance of this, within our own intimate knowledge, we will recite before concluding. In Geneva, two years ago, that town of the golden fleece (so far as the British tourist is concerned), we accompanied two ladies down the Rue de Rhône. They desired to spend a few francs in Swiss carvings prior to their departure, and with this purpose we entered a very grand and attractive shop in that busy thoroughfare. There were some of those well-known toy chalets in the window, with quaintly-carved balconies and overhanging roofs, and we asked at the counter for a few specimens to look at. The attendant went her way, and returned presently with a handful of little houses, but rather smaller than those which had attracted our attention. They were, indeed, too small for us; but what was the price? "Ten centimes a-piece," was the reply; "but these larger ones are thirty, and these others fifty." To say that our party was astounded, was but faintly to express our ideas. One penny! three-pence! and five-pence! Why, we could have purchased the whole shopful of articles with the sum we intended to spend! Instead of being on our guard in the matter of expenditure, it became a question how we could possibly spend all our money. However, in the end, we found no difficulty in the matter; and six months afterwards an English bank-note was sent over to that same shopkeeper with the request that he would forward a curiously-carved poodle dog umbrella-stand, which had taken the fancy of one of the ladies while she was looking at one of the ten-centime chalets.

## ABOUT OTHER STUDIOS.

WE have commented upon certain mistakes made in some studios; we are now about to point out further shortcomings in other studios; and as it is our intention to be critical rather than complimentary, we make no apology for any outspoken remarks we may be tempted to make. Our standpoint is that of the public, and our readers will please to remember that it is as a visitor, or outsider, that we are going to have our say.

We shall address ourselves to two shortcomings in particular. The first has reference to the outside of the studio, before the sitter enters; the second to his treatment as a customer. Everybody likes to put the best face he can upon his affairs, and the photographer is no exception to the rule. He wishes his establishment to have a presentable appearance, and takes some pride in selecting a fine studio—if he does not actually build one—spending much thought and care in putting it in apple-pie order. Unfortunately, there is no check on his ambition, or rather he is controlled by no other idea in his preparations than that of making his studio grand and momentous in the eyes of the public. In vulgar parlance, he wishes to “kill” the unsuspecting passer-by. His sole aim is to impress everyone with the magnificence of his new venture, and to attract the town.

Now this may be very well, if the locality in which the establishment stands is the centre of wealth and fashion; but otherwise it is a very foolish proceeding. Great cities like Paris and London are able, no doubt, to support a few such establishments—not more than half-a-dozen—but, with an exception here and there, the photographer only courts failure, and sooner or later must needs come down to the level of the people. “Your windows look very nice,” we said to a first-class photographer at a first-class spa, not long ago. He shook his head: “Yes, but I have rather overdone it; I have had to introduce a little notice in the window, as you see, about cartes being half-a-guinea a dozen. I attracted everybody, it is true, but they went elsewhere to be photographed. They were frightened at the grandeur.”

If there are wealth and fashion to be found anywhere in this country, it is at the spot where this gentleman resided; but these alone did not furnish sufficient support. Moreover, he never

had the idea of catering only for them. It was the middle class as well as the upper class he desired—people who can appreciate good work when they see it. These admired his pictures in the window, but were “frightened at the granduer.” It requires a brave man to enter a fine shop in Bond Street to purchase a two-penny penholder, and most people are not brave. Fortunately for Bond Street, there is a fashionable world to support it; but when a bit of Bond Street gets located elsewhere, it is not so fortunate. The stately elegant threshold is rarely crossed, and the spacious interior always looks empty to those crowding the windows. “Come away, girls; it will never do to go in there!” exclaims paterfamilias to his daughters, who have been waiting for their new velveteens, in order to be photographed: and forthwith they are taken to a humbler establishment. Papa comes from Notting Hill, not from Belgravia, and though he does not fear the disbursement of a few sovereigns, he objects to drawing a heavy check.

Grand exteriors, then, with naught but grandeur in the windows, is a mistake in nine cases out of ten. They constitute repulsion rather than attraction; and although a modest little card about modest prices may do something to lessen the evil, it is better still to steer clear of misapprehension altogether. A studio bright and pleasant, elegant in structure and full of nice pictures, will attract the upper ten just as well, while it does not frighten away the more populous middle class. Paterfamilias is generally shrewd, and he knows that grandeur must be paid for. Look at him on the Continent. Now and again he is driven to some palatial hotel, to one of those magnificent piles of white stone recently built in Switzerland, standing at the margin of some blue lake, and bordered with blooming rhododendrons and orange trees. He is never comfortable during his whole sojourn, and is only content when he leaves it. He knows all the time he is but a dry-salter in the city, and though he has a comfortable income enough, a well-built house in Ladbroke Park, West, with a son at Cambridge, and a daughter in Paris, he has no wish to dwell in marble halls even for a night. The Buckingham-Palace-sort of structure, instead of delighting him with the prospect that he is tasting the sweets of twenty thousand a year for half-an-hour, and that if he is “going it,” it is well worth the money, only reminds him that he is spending money with no adequate return. He did not of his own free-will enter



the palace, but was driven there without choice; and although he wishes to travel comfortably, he has no desire to pay for what he neither asks for nor desires. And here it may be remarked that paterfamilias's dislike for pretentious hotels, and to pay for palace accommodation quite unsuited to him, has brought to grief many a Swiss hotel-keeper and Zurich banker who supplied him with money; while year after year we hear of British tourists returning from their summer outing expressing ardent delight at their journey, but somehow very shy about returning again to repeat the campaign. The modern Swiss hotel-keeper furnishes, indeed, a very useful lesson. He is an example of doing everything for appearance; he has taken to catering for the highest in the land, and gone on rising in the scale until, at the moment he reaches perfection, he finds there is no one left to cater for.

Another point scarcely less deserving of attention by a photographer is that of turning your customer into a client. In a family there is as much photographing very often required as there is law and physic, and the position of family photographer is scarcely less lucrative than that of lawyer and family physician. The photographer enjoys "retaining" advantages like these two, for he has charge of the family negatives. We know of some photographers whose "family footing" is quite equal in value to the income derived from other sitters. A lady or gentleman has called in at the studio, has been pleased with the reception accorded, treated with consideration, and henceforth will be portrayed nowhere else. If married, the children—as babes, as boys and girls, as students, and fair girl-graduates—appear from time to time to sit, and then in their turn become clients.

It is a mistake, then, to treat a sitter in the same way as a would-be purchaser entering a shop. The latter may never come again, and the shopkeeper does well, no doubt, to practise his best art as a salesman. But well-nigh the reverse holds good in the matter of sitter and photographer; that is to say, in the interest of further business relations, it would be well if the first transaction were not a large one, for if the new-comer gets the notion that you are a smart man of business, the chances are he has no wish for your further acquaintance. What is desired is, not hook or by crook to secure at the outset a large order, but rather to establish friendly relations and secure confidence with a view to further favours.

If photographers would bear this in mind, it would be greatly to their advantage. A studio is, in some respects, a lounge; at any rate, it should always contain pictures and portraits of sufficient novelty and attraction to induce a visitor from time to time. It is a pleasant place for a chat or to take a friend, and a sitter pleased with his reception will not hesitate hereafter to enter, whether he desires to spend money or no. And if friendly relations of this kind are once established between photographer and sitter, the former may rest assured that his affairs will prosper.

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### DOUCEURS.

MADAME BERNHARDT-DAMALA is reputed to have made a good sum out of the copyright of her face. When she went to America, despite the many portraits that had preceded her, she managed to strike a capital bargain, and received several hundred pounds for the exclusive right of photographing her. If Mrs. Langtry has not benefitted by her portraits—in a pecuniary sense—she has unquestionably in other ways; for it is not too much to say that, largely as photographers have profited by Mrs. Langtry, her pictures, sold everywhere, have been an advertisement of incalculable worth.

It has been said that you may gauge the popularity of an individual in these modern times by the number of photographic portraits of them that are sold. This is doubtless true. But it is none the less correct that the popularity in question is due as much to the supply of the pictures as to the demand for them. Let us put an instance. If half-a-dozen well-known photographers were to put their heads together and make up their minds to execute a portrait of some second or even third-rate actress, and these portraits—of course taken with taste and art-feeling—were suddenly put before the public, the pictures would sell at once. The fact of the lady—or it might even be a gentleman—not being universally known, would be no bar to the sale; it might in a measure add to the demand by reason of the mystery. Knowing ones who had heard of the new bidder for fame would soon impart their knowledge; and with society papers to the rescue, he would be badly-informed, indeed, who did not within three months possess a copy of the portrait, and know all about the original.

We need not particularise. Our readers can cite examples, without our help, of many a celebrity who has been made popular by the photographer, and whose fame does not travel beyond photographic mounts. In the class of "beauties" alone, we have countless specimens; these ladies, good looking as the majority of them are, are endowed with charms no greater than other fair sisters. They may be singers, or actresses, or dancers; but it is not the rank they take in their particular profession, any more than their comely features, which causes them to be held up to public admiration. It is, we repeat, rather because photographers have taken some trouble to produce artistic portraits of them, and to publish the pictures.

We make these remarks for the sake of introducing a subject that decidedly merits mention among the "By-the Byes," of interest to the photographer. We mean the question of how far the photographer, and how far the photographee, is benefitted in cases of publication. It has been so often asserted, without challenge, that the photographer is alone the gainer, when he publishes a portrait—that he has everything to win and nothing to lose—that we think it is high time a word should be said on the other side, so that the subject may be set in a proper light. But that is not our only object; it is to warn photographers against the custom of giving *douceurs* in return for shadowy privileges, a custom, we fear, that will gain ground in this country, if not speedily checked.

We do not know how far our own readers have suffered by such custom; but when we mentioned "in another place," a short time back, the circumstance that it was not unknown in Paris, Berlin, and other Continental capitals, a note came to us from a photographer, who recently opened a studio in the West End, and who received two such overtures within a week of taking down his shutters. The first application had reference to introducing, for purposes of portraiture, a lady who stands in the highest rank in the dramatic profession, and who plays not a hundred miles from the Strand; and the other, curiously enough, was touching a lady who was on the point of "coming out" as a star actress. "Nearly a twelvemonth," writes our correspondent, "has elapsed since the applications reached me; but, strange to say, the 'star actress' in question has not come out yet—at any rate, not in London, and under the name that was mentioned. In neither case was any specific *douceur* mentioned, but no



doubt these would have been quoted, if the preliminaries could have been arranged.

In Berlin and in Paris, where *douceurs* have been asked, the way of demanding them, so far as the matter has come under our notice, differed in some respects.

In one case at Berlin, where three hundred marks were asked (or £15), the demand came after the "celebrity" had sat for the portrait, and the copies were in course of publication. In Paris, the sum demanded is usually higher, for such fine studios as those of Benque and Van Bosch are supposed to have coffers overflowing with wealth. A thousand francs (or £40) are not unfrequently asked by an agent in the French capital, who does not appear until after the great lady has come and gone. The photographer knows not whether the sum is to go into the hands of principal or agent, and, for fear of giving offence, can scarcely interrogate the former. To the question we put to our Paris friends, whether it did not pay commercially to give such commissions, we were answered in a decided negative. It is one thing to present the visitor with copies of his or her portrait in any reasonable number; but to pay a commission is only wise under very exceptional circumstances, we were told. It is the sitter's aim to make herself known to the world, not to make the photographer's fortune; and therefore, unless the exclusive right to photograph were bargained for, in nine cases out of ten the photographer would never see his money back again.

It is this side of the subject that does not strike the public. They think only of the number of portraits that are sold, and what a lucky man the producer of the same must be. And, no doubt, he is a fortunate photographer, too, if he has not paid too dearly for the privilege. If, however, he has spent much previous time and considerable pains in securing the negative and retouching it—the negatives of some of the published portraits represent a large sum, as our readers well know—and has paid a commission into the bargain, he will be a clever man, indeed, if he makes any profit at all in these days, when cabinet pictures frequently sell at a shilling a-piece. Indeed, if the "celebrity" sits for his or her portrait about once a week—and some of them apparently do so—the best part of the bargain is not with the photographer at all, but with the individual who seeks publicity, and thus secures a capital advertisement with no outlay whatever.

It is very seldom, then, that the payment of a *douceur* is good business tact on the part of a photographer. When the person to be photographed is of high social standing, or has achieved greatness by some public act, the payment of a *douceur* is obviously out of the question; while, if it is asked for by those who directly benefit by the publicity the photographer gives them, then, unless a definite bargain for exclusive rights, either for a certain time or in a certain country, is made, the photographer is very unlikely to reap sufficient to warrant the payment of any substantial sum. The case of Madame Bernhardt-Damala, which we quoted at the outset, may indeed be taken as the exception that proves the rule; other great actresses and actors, and singers in this country, could make similar bargains if they chose, for it would pay any photographer to purchase the copyright in their faces; only the question is, whether this would suit the purpose of such celebrities. Publicity is what they want, and it is far dearer to them than any *douceur* could be. Their object is to be portrayed as frequently as possible, and this fact the photographer would do well to bear in mind in dealing with them.

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## PHOTOGRAPHY AND MAP-MAKING.

WE are wont to take a good deal of credit to ourselves for keeping in the van of photographic progress. There is no improvement or modification of importance brought to light on the Continent or America that escapes our attention, and little time is allowed to elapse before such improvement or modification is practically tested in our hands. But we are not always so ready to make application of these benefits, and an illustration of this is afforded by the limited use to which photography is now-a-days put in map-making.

We suppose it is our insular position and naturally conservative disposition that causes us to stick so long to old prejudices. We are well-to-do as a nation, and spend more, in proportion, upon our Government establishments than do other countries, and, possibly, this is one reason the more why we do not hurriedly forsake old ways, and turn to those that are more economical and expeditious. There are not only as ready inven-

tors in this country as elsewhere, but, what is more, Great Britain is universally known as the best market for patents; yet, while our War Office is one of the most liberal of our spending departments, we had the strange anomaly, it may be remembered, some years ago, of a poor country like Prussia being supplied with breech-loading fire-arms at a time actually when we were engaged at war with Russia, and ought to have had these superior weapons at any price. A not less surprising state of things is that of map-making at the present moment. Austria, a needy nation, is producing ordnance maps better and far more quickly than we, who have a purse of unlimited length at our disposal. It is computed, indeed, that the Imperial Geographical Institute at Vienna can manufacture maps tens times as quickly as we can; and while we shall have to wait, so parliamentary reports tell us, at least another twenty years before the Ordnance Survey of the United Kingdom is complete, the Austrians, with a far wider domain, expect to finish within three or four years.

Far be it from us to undervalue the great work which has been accomplished by our Ordnance Survey Office at Southampton. Photography is employed largely at that establishment since it was first introduced under the direction of Colonel Sir Henry James some time in 1855. Our readers will remember that, in one of our early descriptions of "Studios," we gave an account of a visit to that establishment, and explained the way in which the camera is made to assist in the work of map-making. But Southampton still gives employment to a large number of engravers, for we still engrave most of our original maps, and it is, generally speaking, only when it comes to making reproductions of the original, that photography is employed in all its entirety.

We have said that Sir H. James introduced photographic work in the year 1855, and this fact bears out the remark we made at the commencement of this article. In this country we are always on the alert for novelty and improvement, but, when we have them, we are slow to take advantage of their value. So it has been with the process first known in this country as Sir H. James' photo-zincographic process, albeit there were many other methods brought forward contemporaneously, which were not less practical. In fact, speaking without prejudice, at this distance of time, good and useful as was the original photo-zincographic process brought forward under the auspices of the



late Colonel James, it cannot be denied he was a most fortunate man. The honour of knighthood, and a large sum of money, fell to his lot, in return for having given his process to the country; yet it has puzzled many a skilled photographer and skilled lithographer to work the process practically on the lines given in his early manuals on the subject. The directions were anything but complete, and although we freely admit that the process was worked most perfectly by the staff at Southampton, it was not until information was supplied in addition to that in Colonel James' manuals, that a practical method of photo-zincography or photo-lithography was in the hands of the public. We must not, in fact, now that we have mentioned the name of Sir H. James, ignore that of Mr. W. Osborne, who worked quite independently of the Southampton Director, and whose results were in no way inferior.

To Colonel A. de Courcy Scott, till recently the executive officer at Southampton, must be given a large share of the credit that attaches to the perfect working of photo-zincography at the Ordnance Survey Office, and to him we owe in the main the very beautiful reproductions of the Domesday Book, and other earlier illustrations of the process. Still, thoroughly as they understand the application of photography to mechanical printing at Southampton, there is not the same important use made of the art as by the Austrian geographers. A large staff of engravers are still employed on the costly and tedious operation of preparing engraved plates, and the consequence is, that both time and money are expended upon an operation which could be done in the main more correctly, and, of course, more expeditiously, with the aid of the camera. We do not say that engraving by hand has not its advantages; possibly the work is more delicate and more even, although, with the improvements of late introduced at Vienna, we hesitate in saying even this much. Engraved lines examined with a magnifier are usually sharper and more continuous; but this superiority, when it exists, is one that should not be purchased at too great a cost, especially as photography has counter-advantages which may be well said to balance the processes once more.

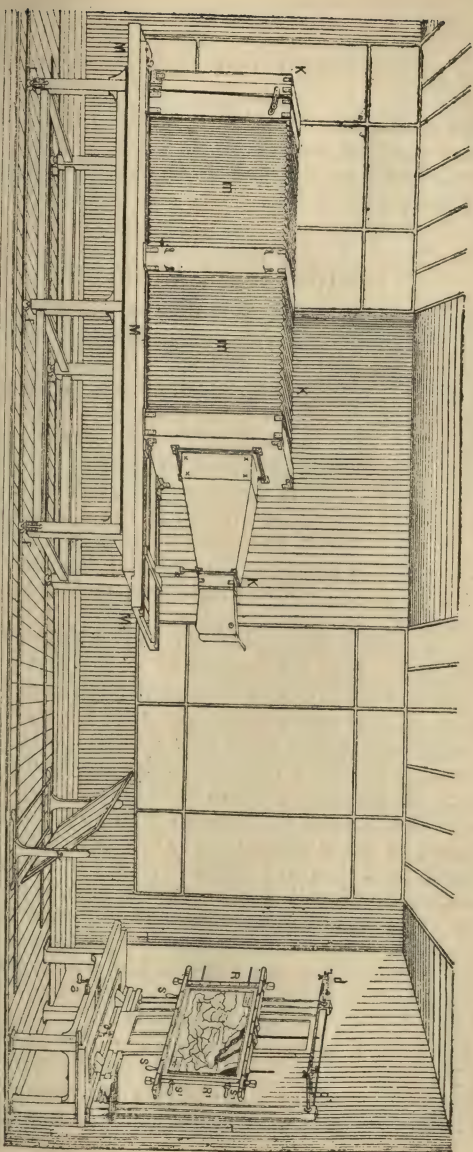
Of the arrangements at the Imperial Geographical Institute our readers are also familiar. In recent issues of the PHOTOGRAPHIC NEWS we have described the *modus operandi* of Major Volkmer, who has charge of the photographic department, and

and on the next page is a pictorial illustration of the copying camera and lighting arrangements in Vienna. In fact, those who desire to have information on the subject of copying designs and maps, can do no better than study the excellent arrangement of Major Volkmer, which is one of the most perfect that can be imagined. There is practically no hand-engraving at all in the Geographical Institute at Vienna. The original drawing or map made from the surveys is executed upon white paper by means of Indian ink. Care is taken, as Major Waterhouse has but recently pointed out in his excellent lessons on photo-mechanical printing, that the Indian ink lines and shading on the original are of suitable thickness for perfect reproduction by photography, the strength of the various lines—which are reproduced in proportion by the camera—being adjusted according to a hard and fixed rule that has been laid down. In a word, the original map at the Vienna Institute is produced wholly and solely with a view to its reproduction by photography. In these circumstances, it is easy to understand how a most perfect transfer of the map may be obtained for mechanical printing. With the aid of a rectilinear lens, and copying and lighting arrangements duly adjusted, a negative is secured that is so correct that, unless measured with a micrometer scale, no error from distortion of the lens is perceptible.

There is one point, and only one point, of importance in which the subsequent manipulations—that of placing the photographic image upon a stone or metal surface for printing off—differ from those in general use at the Ordnance Survey Office at Southampton. A print is made, as everybody knows, upon a sheet of paper faced with a mixture of gelatine and bichromate, and this print has to be inked up in order to get a “transfer” suitable for application to the printing surface. In Vienna, this inking-up is done with a velvet roller. The bichromate print is dipped in water, placed flat upon a glass plate, and then worked up gently with a velvet roller and thin transfer ink. A leather roller, let it be ever so soft, fails to produce such fine and delicate lines, and it seems to be due to the velvet roller, among other refinements of work, that the Austrians are enabled to produce photo-maps of such delicacy and perfection as to permit the superseding of engraving.

Here, then, we have the reasons why Austria is outstripping Great Britain in the production of its Ordnance Survey Maps. We may console ourselves that our maps are more finely en-

MANNING & SONS



MAP-MAKING AT THE GEOGRAPHICAL INSTITUTE, VIENNA.

Photo. F. 10. 2. 1882.



graved and more delicately printed; but even if this be so, which we believe our Austrian friends do not admit, their results are of a very perfect character, and are, moreover, produced at great speed and at very little cost.

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### PHOTOGRAPHIC ANALYSIS.

PHOTOGRAPHIC analysis is just like spectrum analysis. It is a quick and ready means of examining bodies and discovering their nature—or, rather natures. It is concerned, however, with the analysis of mind, rather than matter. Still, in its main aspect, photographic analysis may well be compared to spectrum analysis, for in the latter, as in the former, it is necessary but to bring the object to the touchstone of ordeal, in order to learn the result. You heat a body in spirit flame or blow-pipe, and, *presto!* its composition is at once set before you in the spectroscope—in an instant the whole story of its composition or character is laid bare. So it is with photographic analysis; the sensitive plate is introduced into the camera, you expose, and, at the instant of your uncapping, the result is apparent.

Perhaps we had better explain ourselves a little more. As we have said, it is not in the analysis of matter that photography assists, but in the analysis of character. We maintain that, as in the case of the spectroscope, you have merely to bring the photographic lens to bear upon your chosen body or bodies, and, in an instant, we have valuable assistance in divining their character. In the studio, where there is but a single sitter, and he is under the hands of the photographer, no correct reading can be obtained; so many things tend to interfere with the truth of the research, that it is not worth having as a result of photographic analysis. But it is different in groups, and especially in the case of groups photographed out-of-doors; then, if the photographer does not interfere, and has only time to give but a few rapid instructions as to posing—and he can seldom do more—we get valuable results in respect to the reading of character, which afford the psychologist infinite study.

The best groups to examine are those of well-to-do-people. In fact, photographic analysis cannot be applied to its full extent in the case of tillers of the soil, and men and women of the same humble caste. As it is with bodies under the spectroscope, in

which the yellow sodium line seems to be the general characteristic, so in photographing a group of aborigines the one dominant characteristic laid bare by photographic analysis is that of shyness. But when we come to the examination (by directing upon them the photographic lens) of other classes, higher in the social scale, we obtain results much more elaborate; some, indeed, being so complicated as to require the most experienced student of human nature to comprehend.

Into the more subtle indications of photographic analysis we do not, however, propose to enter on the present occasion. Our remarks are quite of a preliminary nature, and bear the same elementary stamp as does the shilling science primer to a comprehensive treatise by Stokes or Huxley. In fact, photographic analysis, as a science, is but in its infancy; and if but half the attention is paid to deciphering its results as are given to bodies above the earth and below it, we shall soon be in possession of a system of "thought-reading" far transcending that of Mr. Irving Bishop. Perhaps the new Psychological Society will give its mind to the subject.

In any case, whatever its importance, the results of photographic analysis are exceedingly interesting. In some instances, we get results before even the lens is uncapped. Here is a case in point. A group of foremen in a Government yard are under examination by the lens, their fussy, overbearing chief seated in the centre. "Stop, stop!" he cries, springing to his feet, just as the cap is being withdrawn; "this won't do; there are two chairs; I can't have anybody but me sitting down." Then, when all is quiet once more, and the eventful moment comes, we have the bright line "arrogance," unmistakably depicted in the centre of the plate.

All sorts of groups will repay study. A marriage group, with bride and bridegroom in the centre, and the gaily-dressed wedding guests around, rarely fails to offer plenty of material for the photographic analyst. A group of Freemasons is another interesting example, except that here there is a good deal of sameness about the character—self-satisfaction and self-importance predominating. Groups of scientific men, of staff-officers, of painters, of authors, of students, of clergymen, of ambassadors, of athletes—nay, of photographers—all are quickly resolved into their elements by the uncapping of the lens!

Let us take an example. Here is a group of a dozen men

posed under the portico of a public building. It will serve our purpose well. We take it up haphazard, and know not the particular walk in life the gentlemen follow. But that is a matter of indifference—we have no desire to know how they call themselves; we want to find out their characteristics or idiosyncracies as human beings. Here is one gentleman well to the front; he has whipped off his hat, so that the head gear may not overshadow his features, and stands staring straight at the camera. He concentrates his ideas on himself; he is perfectly still and rigid, and gives not a thought to others round. He knows all about photography and photographic portraits, and takes his measures accordingly; his character is easy to read. Above all, he takes care of No. 1; he may overreach himself a little now and then, but that he is more pushing than his neighbours, and keeps well abreast of the world, is very evident. Whatever betides, he makes things safe for himself in his everyday career.

Still examining the same group, we choose No. 2 personage. He is quite in the rear; but he is well seen, because he happens to be standing half-way up the steps. He does not look at the camera—or, rather, his face is turned away from it—and, with a composed and devout appearance, he is gazing into the far distance. Was it he who called out to his friend Jones, in front, to move just a little to the right before the drop-shutter fell? His hands rest upon the knob of his umbrella, and the linen he displays—there is a good deal of it—is very white and very limp. Apparently the only thing in the world about which he is not thinking is, that he is one of a group before the camera—at least, so one infers from his placid countenance. His character, you may set down at once as of the Pecksniffian type.

As coming aptly after Pecksniff, we select, for example, No. 3—a little, thin, smiling figure, half elbowed out of his place by those on either side of him. He is quite content to be where he is, notwithstanding the uncomfortable position; and he painfully presses one arm behind him, so that he may not inconvenience the big bully beside him. He enjoys the half-place permitted him far more than personage No. 1, with all his vantage ground; he is a relative of Tom Pinch, and would still smile and beam and be content were he eclipsed altogether.

No. 4 personage is a young fellow, who has placed himself in a half-recumbent attitude on the grass in front of the group.



The fact is, he does not care where he goes—the ingenuous youth. Only he is so very frank and straightforward in his demeanour that you cannot help thinking it is all put on, when you come to examine closely. His handkerchief peeps out of his breast pocket, and the silver-knobbed cane, with its elegant tassel, droops from a neatly-gloved hand. Our young friend in front evidently lays stress on his personal appearance, and would not feel offended if called the Adonis of the party.

No. 5 is all whiskers and smiles, and would have us believe he is the merriest wag breathing—the heartiest, most good-humoured of beings. But it is evident, at a glance, that he has hard work to keep it up, and there is more of a set grin than genuine feeling about his face: a sort of fine-weather gentleman, or stage “merry Swiss boy,” who is uncommonly dull and unpleasant when you meet him in ordinary every-day life.

No. 6 personage has a firm, determined countenance, and stands with his arms tightly folded with a sort of let's-do-something kind of manner about him. That he is all energy and life, there is little doubt; he might do a thing hastily, but you could not charge him with apathy or laziness. The man next him, who stands in profile, and is looking nowhere in particular, is a little difficult to decipher; but that in his own opinion he is a man of parts, well-read, and possessed of high taste and culture, is, at any rate, as clear as noon-day. Finally, the florid gentleman, looking straight to the front, with his hands in his pockets, is the most difficult to fathom of all—so difficult, indeed, that we are not disposed to make a reading until we have conducted a second experiment.

Here, then, is an example of photographic analysis. Like other operations of the kind, it requires to be conducted with care and nicety; but that it is a fascinating study, and one yielding accurate results, few will deny. We anticipate the speedy formation of a Society of Photographic Analysts.

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## MODELS.

VERY few photographers avail themselves of the assistance of models, either living or lay. It is a great pity this should be so, for it is certain that one cannot study the arts of lighting and draping very well without their aid. The impatient assistant,

or fidgetty reception-room hand, who is usually made to do duty for trial plates, is a very poor substitute, the busy photographer seeking to improve as he goes on, without much thought about taking pictures that are not paid for.

And yet the matter of lighting is perhaps the most important, since it is the most effective, quality in photography. The high rank taken by Adam-Salomon's portraiture was due to the circumstance that he understood lighting the sitter; his technical photography was nothing out of the way, but his training as a sculptor gave him an advantage over most of his brethren. In a word, the effective illumination of his models has never been surpassed, if it has ever been equalled. Usually the photographer pays great attention to the construction of his studio, but lacks the judgment to use his illumination; he overlooks the fact that it is not the designing of ingenious screens, but the thoughtful employment of them, that is necessary to ensure success. He demands of his friends practical hints and implicit direction as to the advisability of letting light in from this side or that, as to making his roof lower or higher, and as to the distance the sitter should be placed from the casement; in brief, he imagines a studio can be constructed that shall at any time give him a plastic, well-modelled, and effectively-lighted result.

Our readers will bear us out that photographers who regard lighting from this cut-and-dried point of view are by no means a small class. And there is another class, not very small, either, who, beyond trying to secure an additional so-called Rembrandt effect, do not study their lighting from one year's end to another. They find they get passable pictures with a screen here, and the camera there, and they are satisfied. They do not care for anything beyond conventional limits, and most certainly never get it.

Why should the photographer be able to do without what every other artist declares a necessity? The painter's model is a part of himself. For the study of drapery and drapery folds, a lay figure serves most of his purposes, and it would be well, indeed, if the photographer followed suit, and were to study drapery in the same fashion. There is no one in this country who can photograph drapery like Fritz Luckardt; for one reason, no doubt, because no British photographer has taken the trouble to study it, under the camera, so thoroughly as the well-known Viennese photographer. Whether it is silk or satin, soft wool

or stiff brocade, with rigid bends or graceful folds, Luckhardt will render all its picturesque qualities in the most favourable manner, displaying them to the very margin of the negative. Only systematic study and experience in lighting and draping can teach the photographer to do this. Herr Luckhardt knows very well beforehand what he is going to produce; he is sure success will attend his effort before he takes his picture; that is to say, he has studied the effect of lighting and draping so well, that he can always pose to get a required result.

Adam-Salomon, again, as we have said, studied lighting systematically as an art. He did not rely upon his knowledge of statuary to impart ideas: he had recourse to lay figures. He is, indeed, the only photographer we have known whose studio contained not the mere wooden doll of a painter, but life-sized, full-visaged, well-dressed figures, whom the casual visitor might take, at first sight, for a phlegmatic sitter. We saw two of these models on the occasion of our last visit to M. Salomon's studio, a few days before his death. The complexions of these dolls, their hair and general appearance, were so well rendered, that they served as wonderful substitutes for human models, and it was with their assistance that the famous French photographer worked out those wonderful effects of light and shade that made his name a household word throughout Europe. M. Salomon only received sitters for the space of two hours during the day; the rest of the time he devoted to work in his photographic or sculptor's studio. The benefit of studying light effects with a lay model will be obvious to all, for the mere turn of the head, or deflection of the forehead, often makes all the difference; and when, at last, the happy effect is produced upon the lay model, it is not difficult to light a living sitter after the same manner.

Coming next to the living model, it must not be supposed that everyone in this world is suited to play the apparently very easy rôle. Apart from appearance and temperament, it takes much to make a good model, as any painter of experience will tell you. And it is for this reason we make so bold as to counsel our readers, when inclined for study, to call to their aid a professional model, rather than anyone else. A professional model, they will find, will often just make all the difference between success and failure in the result, as it frequently does with the painter. And here we may remark on a statement that is now and again put forth to show why photography has no claim to be considered an



art—a statement, curiously enough, that never gets properly challenged. It is urged that the photographer must have his model before him, otherwise he cannot produce his result, and therefore it is the model, rather than the photographer, who is the creator of the picture. This is true enough; but, practically, the painter is in the same position. In nine cases out of ten, he could not produce his picture without he had the model before him, and a model, too, appropriately draped and gracefully posed, if the picture is to be a success. Of course, the painter usually possesses more artistic ability, and is endowed with far wider powers, than the photographer; but that is not the question. We simply wish to say that, because a photographer *must* have a model before him, this is no proof that photography is without title to be considered an art, for the reason that nine painters out of ten could not produce artistic results except under the very same circumstances. To depict a cavalier, the painter not unfrequently sets his model astride a saddle in his studio; to depict a falling man, he may suspend his model with hoops and cables from the ceiling; while a fisherman usually stands with net and rope, as if really engaged in fishing.

We want to see photographers taking a leaf out of the painter's book, and studying lighting and draping with trained models. Two-thirds of the portrait studies shown on the walls in Pall Mall every year—one might almost say nine-tenths—would be vastly improved if they would only do this. A girl who has comely features and well-proportioned limbs, and is accustomed to smile or to laugh by the hour together, is a totally different model from the haphazard selections usually made from studio or printing room. The painter does not take the first best person he meets. Either he has made up his mind to a picture, and goes about seeking a fitting model, or one morning some Madonna or Hercules walks into his studio, and forthwith he sees his way clear to a canvas. Many a great picture has been started into being by the happy arrival of a choice model, and there is no reason why photographers should not benefit by such "happy thought," as well as their prouder brethren. Look at Rejlander's pictures; they certainly owe their success more to the study and selection of the model than to anything else. Of course, he never attempted a picture unless he first of all realised it, but his way of working is precisely that of the painter; in other words, he either searches for a model to embody his idea, or else lets a model's appearance suggest a picture for itself.

Our main point, however, has been to speak of models as an aid in the photographer's customary work—how by having comely and passive sitters, specially fitted for posing, he may study systematically the arts of lighting and draping, and thus improve in art photography. There is, obviously, the employment of models in picture making, and photographers who turn their attention to this branch would do equally well to have recourse to the professional model rather than to the occasional amateur.

### PEOPLE WHO DO NOT LIKE THEIR PORTRAITS.

PEOPLE who do not like their portraits, at first sight, form a large class, since, with an exception here and there, it includes everybody. Many survey their proofs without a murmur, and give a large order for prints on the spot; but, for all that, the pictures are not satisfactory in their eyes. Of all classes, possibly, the elderly gentleman is the most easily pleased; but he generally thinks the photographer makes him out rather more bald than he is, and depicts the crows' feet under his eyes too prominently. Phyllis, let her picture be ever so charming, is never gratified when the proof is submitted to her. "Dear me; well, I suppose it is me. I should never have known it. But I had better have some copies printed, of course. Oh yes, you can have the proof back, certainly; and now let me look at something nice." This is meant for a polite speech. Not unfrequently it is simply: "Oh, what a fright! I'm sure, Ma, I can't look like that. And there's the lace on my left sleeve crushed out of all knowledge."

Our dictum as to people never liking their portraits refers only to "first sight," or to the time when the picture is taken. Ten days afterwards—or, it may be, ten years—it is another matter altogether. "Have you the negative still of that portrait you took exactly three summers ago?" is an enquiry that comes again and again. "I did not like the picture at the time, if you remember; but my friends think it such a good one that I thought I would call about it." The caller, under these circumstances, generally gives a very good order; he or she—for young gentlemen are quite as fastidious as young ladies—has had pictures taken more recently, and these please less and less

the more the sitter advances in years. Photographers are so well acquainted with the fact that a good picture is sure to be liked sooner or later, that, despite an unfavourable verdict at the time, the negative is carefully put away and registered; and, in a well-established business, stock orders are almost as remunerative as those given by fresh sitters.

There is, of course, no objection to a sitter passing an adverse opinion on his portrait, and photographers who are beginning business must not be too easily depressed by unwelcome words, when they have not only done their best, but fully believe they have been highly successful in their purpose.

As a rule, matters come right in the end, and the customer is satisfied. Nay, if the sitter has not at the first openly expressed dislike, he may, and frequently does, generally acknowledge his obligations to the photographer. The sitter takes his picture home, and there, however much he may inveigh against its imperfections, friends one after another begin to point out, it is not so bad after all. There is a trite saying to the effect that no one is a good judge of his own portrait, and if only sitters could be induced to take the opinion of friends, rather than their own, the difficulties of a photographer in such matters would be reduced to *nil*. In any case, we would warn young photographers never to expect any thanks. In a portrait, you touch a sitter on the most delicate point—his personal appearance; and the less store he pretends to set upon it, the more likely is he to take umbrage at any supposed discount of his good looks.

So far, in respect to the *bona fide* sitter, who, if not at once, is, after a while, convinced that you have turned out good work. There is, unfortunately, another class, whom photographers know but too well, and with whom it is necessary to be exceedingly strict; we mean those who decry the portrait, but desire, nevertheless, to keep the proofs sent them of the negative. It has been said that everybody has a disposition to be mean sometimes, and certainly there are people especially mean in their dealings with a photographer, however large-hearted and benevolent they may be at other times. When the regulation to pay previous to sitting is adhered to, there is little chance of suffering from the meanness in question; but, unfortunately, photographers do not keep to this hard and fast rule. Then, we have recurring examples of this weakness. A



lady is desirous of getting a portrait of baby, and upon the latter the photographer spends half a morning, and a dozen precious films. All to no purpose; none of the proofs please, and as baby cannot be worried again just then, the appointment is put off *sine die*. But, as the lady is going away, she turns back and asks if there is any objection to her keeping one of the proofs; they are probably of no use to the photographer, she ventures, and one of them is not such a bad picture of her darling, after all. Naturally, the photographer refuses, perhaps somewhat curtly, and off bounces my lady. Next morning there enters nurse; she is a very guileless creature, and, of course, knows nothing of the unpleasantness between her mistress and Mr. Photographer. She only knows that Mr. Photographer is a very nice gentleman, and for that reason she ventures to ask for herself—only for herself, mind—one of baby's spoilt pictures, which she knows is of no use to anybody.

Our readers are perfectly familiar with examples of this kind, without our quoting further. Many photographers for this reason make it a custom to charge a fee for sitting, and then an additional sum for copies. Mr. Fergus, of Largs, does this, his custom being to require only half-a-crown a copy for cabinet pictures, but a guinea for posing. Mr. Bassano, of Bond Street, and others, do the same; while the custom is not unknown on the Continent, for we found it to prevail at Herr Koller's studio in Pesth. It is one safeguard the more, but at the same time, if people are disposed to be mean, they will know how to evade even regulations of this kind.

The custom of forwarding untuned and unfixed prints is another way of protecting yourself. The plan has its drawbacks, it is true, for if a portrait will not please after careful retouching and mounting, it is scarcely likely to do so in the rough. Mr. Jabez Hughes, who employs the carbon process systematically at his studio in Ryde, once replied to us, when we asked if he printed everything in permanent pigments: "No, I do not always employ carbon; I print from my negatives also by the silver process, but only the unfixed proofs supplied for approval. I may say, therefore, that I utilise in their proper sphere, the fading as well as the permanent process." On the other hand, there are a great many studios—probably the majority—whence proofs are despatched as carefully finished as the subsequent prints.

Apart from the natural dislike to one's own portrait, when it is first seen, and which, as we have said, is got over in time, there are frequently other reasons, no less absurd, but still no less important for a photographer to understand, why a picture is decried. These he will soon guess, if he only studies human nature. Young ladies and young gentlemen are vain enough, no doubt, but they do not absorb all the vanity in this world. A man of forty tells you : "I am no chicken, I know, but still that picture makes me an old fellow of sixty at least ;" while a man of sixty again will say : "I know I have plenty of grey hairs, but I am not quite such an antiquated pantaloon as that !" and so on. Brilliant lighting and judicious retouching will do much to check these complaints ; while in the case of younger sitters it is the costume, rather than the features, that is at fault, when a picture is rejected after a week's consideration. The most satisfactory portraits—to the photographer—are those ordered and paid for by mamma or papa, aunt or uncle, for the simple reason that the prints are approved, not by the sitter, but by a relative, who, as we have said, is a more impartial judge. The great thing is to know whether a picture will be ultimately approved or not. If a garment is awry, or folds exist where they should not be, nothing will induce the young lady or gentleman to like a portrait, and a wise man does not waste words in seeking to convince the dissatisfied one ; in like manner, a photographer who studies human nature has little difficulty in at once localising the fault, if there is one, and of gauging whether the dislike of the sitter is of a temporary or permanent nature.

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### INVENTORS AND DISCOVERERS.

INVENTORS and discoverers are well known to be an injured race. Few have their rights properly recognized, and fewer still derive any personal benefit from them. It has been so from the beginning of history, and is likely to be so to the end. The introduction of photography—that is, of practical photography—furnishes us with a very good instance. Daguerre was hailed for some time as the one and only inventor of practical photography. Arago, who stood sponsor for the new invention, and published it to the world in an impassioned harangue, which has since become historical, never once mentioned the name of Nicéphore Niepce,

Daguerre's dead partner, and it was not until some months afterwards that the connection between the two men got bruited abroad. To an Englishman, indeed, Mr. Bauer, the secretary of the Royal Society, was due the first significant protest against ignoring Niepce's name in connection with the discovery, for it was his impartial testimony, together with the exhibition of some of Niepce's camera photographs, which contributed most to establish the latter's claim to share in the honour of the invention of photography.

Still, to estimate the claims of an inventor or discoverer, is one of the most difficult problems. Thus, while the discovery of photography, as meaning simply the impress of light upon certain bodies, is buried beneath the weight of centuries, we may well attribute to Nicéphore Niepce the taking of the first camera photograph; to Daguerre, the taking of the first permanent camera pictures—for Daguerreotypes, if not absolutely permanent, are comparatively so; while to Fox Talbot, last, but not least, the world must give credit for securing photographs on a transparent medium, by means of which other photographs are produced—in a word, for giving us the germ of the photographic process which has been the most extensively employed by all. But these three philosophers do not at all represent latter-day photography; other *savans*, too numerous to mention, have contributed knowledge scarcely less important to that furnished by Niepce, Daguerre, and Talbot, and unless the labours of this trio, illustrious as it is, had been so supplemented, we should still have but a very imperfect process of photography now-a-days at our disposal. For Niepce's pictures, produced on salts of silver in the camera, were not fixed; Daguerre's iodide of silver process (before bromo-iodide was suggested) was so slow that portraits could not be secured; while it was not until the introduction of collodion and glass for negative photography that the process of Talbot became thoroughly vulgarised.

It is very difficult, then, to apportion to every inventor his just due. Whether it is simply a question of honour or something more substantial, the task of fair allotment is beset with grave obstacles. When there are many claimants—and there usually are—how are we to estimate the value of their contributions? One man may be cited as the originator of an idea; his claim to be the first who published the matter to the world cannot be disputed, and he asks, therefore, that we should render



unto Cæsar what is Cæsar's by right. But was the idea taken up? ask other claimants. Is it not a fact that the memoir published fell dead from the press, and that for a score of years after, not one voice—not even the author's—was raised to point out the value of the suggestion? Nay, more; was the suggestion of any practical value? was it not simply a crude experiment, in which not even the experimentalist himself discerned any value?—an interesting scientific result, maybe, but not more so than hundreds of others that are published yearly.

So later experimentalists will argue; and, in fact, this is the sort of argument that has of late come up in respect to the telephone, the dynamo-electric machine, and the incandescent electric lamp, just as it was in the case of the electric telegraph, the steam engine, the locomotive, &c., &c.

Take the telephone as an example. Four or five years ago, Graham Bell came to this country with his wonderful telephone. He lectured upon it, and demonstrated its wonderful action before every scientific body of eminence. He showed how, by the simplest of apparatus, the human voice could set throbbing an electric current through a vast length of wire, so that one person could make his voice heard to another several miles away. The invention, as Graham Bell brought it from America, was perfect in all its details; it was not only an ingenious and highly pleasing demonstration of electrical science, but it was at the same time an invention whose great use and high commercial value were apparent to the meanest capacity. Graham Bell's telephone, it was at once evident, would be of incalculable worth as a simple and ready means of holding communication, and in a few months the clever American professor had found purchasers without number for his invention. Since Graham Bell's instrument appeared before the public, Edison, Thomson, Varley, and others, have come forward with similar instruments, or with marked improvements on the original, and to-day we have loud-speaking telephones that not only convey the human voice, but magnify its sound greatly on reaching its destination.

But Graham Bell is not the inventor of the telephone. The honour of constructing the first instrument to carry tones is due to a German gentleman, Reiss, whose name, we see, has of late been coupled with the Thomson telephone. Herr Reiss undoubtedly made a telephone in 1861, and a description of it was read to the Physical Society of Frankfurt in a paper "On the

Reproduction of Tones by Electro-magnetic Means." Reiss showed distinctly how certain tones could be transmitted through a wire by vibrations, or, what is the same thing, by the making and breaking contact very rapidly of an electric current; and anyone interested in the subject may still see woodcuts of the instrument in the German electric manuals.

In these circumstances, should Reiss' name, and Reiss' only, be attached to the telephone henceforth? Well, undoubtedly he was the first to suggest such a thing as telegraphing sound, but when it comes to connecting his name to the practical telephone in every-day use at present, one may hesitate. And for this reason. Supposing, after Reiss had made his communication, no one else had taken up the subject—it did lie dormant ten or fifteen years—in that case, the memoir would have remained, like nine communications out of every ten made to learned societies, in the buried archives of the Frankfurt Society, and fifty years hence would have passed into the limbo of forgottenness. For Reiss, valuable as his communication is, read by the light of the present day, attracted but little attention in scientific circles when he made his announcement. He had certainly no idea that his discovery would be the means of people talking to one another through twenty miles of wire; or, if he had, he kept the idea locked up in his own breast. His research was a most interesting one, undoubtedly, but it was far from being a practical instrument for every-day use. It is one thing to make a telegraph wire transmit an audible sound, and another thing to constitute it the means of carrying on conversation between two persons many miles apart.

Here, then, is another illustration of the difficulty of deciding between inventors. We do not know whether Graham Bell was cognizant of Reiss' early experiment, but it is very likely that when he engaged in the work of transmitting sound by electricity, he collected all the data that had been published on the subject. Supposing he did this, as a scientific man should have done, there is nevertheless very great credit due to him for giving us a practical telephone. Somebody was required to elaborate the principle still further, otherwise we should never have had the instrument. For Reiss did not give us a practical telephone at all. Indeed, we may fearlessly assert that Graham Bell was a benefactor to Reiss; for if the American experimentalist had not brought forward his telephone, the world would never have heard of his predecessor.

The difficulty illustrated in apportioning to Reiss and Graham Bell their fair proportion of honour in the invention of the telephone, repeats itself on every hand. The dynamo-electric machine, of which Pacinotti appears to have been the original designer, has been claimed of late over and over again, and, of course, the latest improvements in this direction are vastly superior to the original Pacinotti instrument. The incandescent electric lamp, we are now told, was invented twenty years ago; but he would be a bold man who proposed to give all the honour and glory of the present day incandescent lamps to anyone who lived before the days of high vacuums. In photography, numerous instances can be quoted in which it would not be fair to give all the credit to the first, any more than to the last, worker on improvements. Le Gray suggested collodion for photography, and Archer was the first to make practical use of it; but neither the one nor the other invented collodion. Should not he who did this—Mr. Maynard, of Boston, whose name no one hears—be entitled to some share in the honour? So we must end where we began, by saying that the proper recognition of inventors is rarely met with, merely adding a word of caution that, in these circumstances, it behoves one to be very careful in assigning honours to this or that claimant.

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### ABOUT DRAPERY.

WE have spoken about models, and shown how absolutely necessary it is for the photographer to have good models, if he wishes to produce good pictures—meaning by good models, not simply comely personages, but personages accustomed to sit and pose to artists. The draping of models is a scarcely less important matter, and what we have to say on the subject bears reference just as much to the photographer's every-day work of portraiture, as to his production of studies and ideal pictures. There are three points especially to be considered in relation to drapery: first, its texture, and secondly, its colour (that is, its photographic colour); finally, in the case of picture-making, there is also shape to be considered, and this point, simple as it may at first appear, most embarrasses the student when he wants to begin work.

If photographers only knew the difficulties that beset painters



in their endeavours to find suitable costumes for models, the former would at once appreciate the value of shape and fashion in costume. There are very few districts in Old England where picturesque costume is now to be found among the peasantry, where the ploughboy's smock and milkmaid's flapping sun-bonnet, where the cotton night-cap and quaint knee-breeches of the gaffer, are still worn in their primitive simplicity. Forgotten nooks there are, and outlying hamlets—a patch of lichen-grown and deeply-thatched homesteads and cotters' dwellings, lying in some sequestered valley, beside which neither rail nor high-road travels, may now and then be discovered—where models ready dressed for a picture are seen. But for the most part, our sweet scenes of woodland and pasturage, shady lane and rustic stile, are bereft of any such welcome accessories. The advances of railways and schoolboards have driven before them national costumes, and now, if these are seen, they are generally spoilt by supplemental clothing with an unmistakable air of town-made and vulgar frippery about them.

In Norway (in the Hallingdal Valley, to wit, and some parts of Telemark) there is still a pure national costume; and in some of the remoter districts of Germany a quaint, picturesque dress is also met with among the peasantry. Unfortunately, there is a tendency to combine town finery with these primitive robes, and the consequence is seen in Switzerland, where modern jewellery and ornaments are worn with clothing picturesque enough in its way, but bereft of its sweetness and modesty by starched laces and stiff buckram. As a rule, the artist buys worn garments for his models, and does not purchase new clothing, if he can help it. Photographers who have won for themselves a name in art-photography have done the same. "I bought that gown off a woman's back in Seven Dials!" said Mr. Hubbard, in respect to the model in one of his charming compositions; while the late Mr. Rejlander has been known to follow the wearer of a desirable garment by rail and 'bus from the south of London to the north in order to get an opportunity for a bargain; and it is but a little while since that Mr. Robinson said of one of his most cherished draperies: "That was bought, mind you, not made!" and gave a graphic account of the difficulties he encountered in obtaining it.

An artist, in a word, never lets the chance escape him of purchasing eligible drapery; in fact, new garments are of little

use to him. They are too harsh and stiff, and give unpleasant lines. And if painters cannot do without proper drapery, how much more indispensable is it to the photographer! But, in the matter of lighting and draping, the work of the photographer is better comparable to sculpture than painting, and as we have previously remarked, there is much in common between sculpture and photography. There is no colour either in the work of the one or the other, and to make up for this, they have to pay particular attention to lighting and draping. The study of light and shade without colour may be said to be the main object of both sculptor and photographer, and the latter has much to learn about the behaviour of different shades in the camera. His eye must ignore colour in judging of effects, or, rather, estimate it at its photographic value. This leads to the consideration of texture and tint. Some years ago, white was execrated by photographers, and blue was also deprecated because "it came out white." Now, white satin, white furs, and white laces are to be found in photographs innumerable, and some artists—Fritz Luckardt, Schaarwächter, Löwy, &c.—seem positively to revel in these difficult draperies. But such stuffs still require the master hand to control them, and can scarcely be cited as *material* specially suitable for photographic work.

A French authority has cited *laine claire* as one of the most charming photographic draperies. In texture and tint, a soft woollen fabric is indeed peculiarly adapted to photographic work. Take a soft cashmere, for instance, with its graceful folds, or a delicate alpaca, if the latter is not harsh and inflexible. Another choice material is fine Indian muslin, which, in its unstiffened condition, hangs in gauzy diaphanous folds that are eminently pleasing. Old laces, too, limp, and slightly tinted with age, are exceptionally pleasing as photographic drapery. As most photographers know, a weak solution of coffee presents a most ready and effective means of subduing a glaring white, and we have seen Mr. Robert Faulkner produce the most charming little garments for his baby models from a yard or two of muslin dipped in a very weak infusion of coffee. If a fabric is stiff from starch or ironing, exposure to damp or to a little steam will speedily reduce its harsh character, and cause it to drop in the most graceful of folds. Knitted shawls or scarves of white wool are also among the most delightful of draperies for portraiture, since both tint and texture are agreeably rendered by photography. Texture

is, in truth, a quality that photographers should study more than they do.

Certainly the weakest point in rustic studies with female models is the feet. A study of sculpture would teach the photographer much in this respect. A naked foot is possibly the most agreeable; but then comely models, or, indeed, models in general, have rarely pretty feet. The wearing of boots and shoes has a most disastrous effect upon the shape of the foot *au naturel*, and unless this is partly covered—say with moss and leaves, or by a running brook—the result is usually ugly, more especially as the photographic lens is rather hard upon a mass of white so far from the centre of the picture. Shoes and boots are always the most unromantic portion of a rustic costume—however much a smart *bottine* may help the stylish town belle—and for this reason we wonder the photographer, in dressing his dairy-maid or country lass, never makes use of sabots. Wooden shoes are not unknown in our own country, and in France they are very general; they may be seen, too, of a decidedly shapely character, if the purchaser will only take the trouble to pick out a quaint pair. A neat ankle, and, indeed, a great part of the foot, is seen when wearing sabots, and we feel quite sure that any photographer who is acquiring a wardrobe with a view to produce studies and pictures, could make good use of such objects. In any case, they afford a way out of a difficulty which, judging from past results, is one that has spoilt many a promising picture.

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The YEAR-BOOK OF PHOTOGRAPHY AND PHOTOGRAPHIC NEWS ALMANAC for 1884, price 1s., by post 1s. 3d. A yearly epitome of photography and hand-book of all the modern processes. Published for a quarter of a century. PIPER & CARTER, 5, Castle Street, Holborn, London.





# CONTINENTAL RAMBLES WITH A CAMERA.

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## No. I.—A TOUR IN THE TYROL.

ALBERT SMITH was wont to sing the praises of the *Continental Bradshaw* very sweetly, but many things have altered since the days of Albert Smith. Unfortunately Bradshaw, like Murray, has altered very little, and hence it is that they have been left far behind in the race for popularity.

Baëdeker replaces Murray now-a-days in the case of nine travellers out of ten; and if *Bradshaw's Continental* edition is not eclipsed by *Hendschel's Telegraph*, this is only because the latter is published in the German language, and its advantages are not yet fully appreciated. One example will suffice to show how thoroughly Hendschel caters for the traveller. At the end of the volume he gives a series of circular tours in Mid-Europe; the towns or spots through which the traveller may pass are mentioned, and the price of the circular ticket, so that an intending tourist sees at once whether a tour will suit him or not. But it is not a question of a dozen tours to choose from, or even a dozen dozens; there are something like five hundred different tours set down in Hendschel, in which every combination of places of interest is included. The plan, indeed, seems to have been drawn up by a mathematician, it is so exhaustive. You have simply to make up your mind what places you desire to visit in your journey out and home, and then a little study of Hendschel will show that if you secure, say, No. 44 ticket, series D, this will take you the whole round without trouble, and at a fare about one-third less than that ordinarily demanded.

We are bound for the Tyrol at this moment, and a glance at a

railway map will show that the most direct route is via Cologne and Munich. Cologne is reached in half-a-dozen ways—one of the best now-a-days is that by way of Flushing—and, once there, we advise the purchase of a circular tour ticket to Munich. From early morning to late at night is required for the journey from Cologne to Munich, even by express; so two days at least have to be sacrificed for travelling. The Custom officials are not troublesome at Cologne, and you will not be worried with them again until you arrive at the Austrian frontier in the Tyrol itself.

From Munich—we must get quickly over the ground now, or our space will be wasted in preliminaries—we have still a short railway journey to perform south; we take tickets for Zembach, a station one hour this side of Innsbruck, the capital of the Tyrol, and are set down at the mouth of the valley of the Ziller, or Zillertal, whence we can proceed on foot, or in a trap, without difficulty, to begin our journey.

With dry plates, a light half-plate camera, and two or three in the party, there is no reason why the photographic apparatus should not be carried personally in addition to a light knapsack; for a long country road is easily got over by a lift in a trap, while in mountain climbing the guide naturally takes the greater part of the burden upon himself. We ourselves have always adopted this plan, and only in the case of the professional photographer, who moves with much apparatus and a large supply of plates, is a special conveyance necessary. On the subject of packing plates, changing, &c., we have already spoken in a previous "By-the-Bye;" so merely premising that we carry in a pouch ready to hand our double-dark slides (two or three, as the case may be) ready filled for the day's work, we make a start forthwith. Six plates in a tourist journey is ample for a day's work, and sometimes four suffice very well, for it will be found, practically, that half-an-hour is taken up on an average at each exposure, and as you have, moreover, your distance to walk in the day, two to three hours is the utmost you can devote to photography.

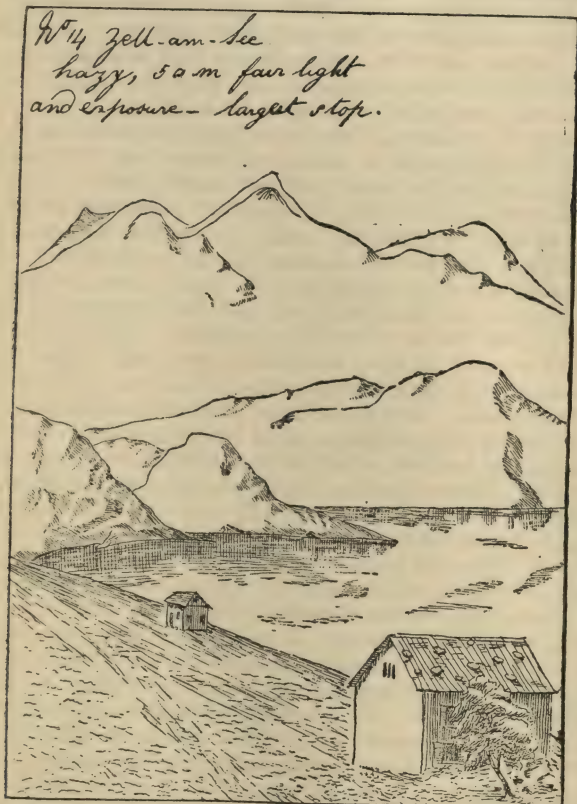
Leaving Zembach—the little white village resting in a broad green plain at the junction of many valleys—we direct our footsteps due south. A quaint old monastery, enclosing a big, grass-grown quadrangle, stands at the head of the Ziller valley, the road leading right through it. It is a charming pastoral scene

around—soft pasturage and green hill-sides on every hand. Dotted over the plain, here and there, are clustering villages, their tapering green spires rising sharply above grey cottage roofs and clumps of trees. The same soft charm prevails as we enter the valley—a pleasant contrast to the grander and wilder nature of much of the Tyrolese scenery. The village streets are of the quaintest. The wooden architecture of the cottages—their boarded roofs weighted with immense stones, for security's sake—is wrought in a most elaborate style, and the balconies under the over-hanging roofs are often masterpieces of wood-carving. Crowning each farm-house is a conical belfry, sometimes fashioned in a most ornamental style, and enhancing the general appearance of the structure ; in fact, the *châlets* here are more Swiss than those in Switzerland, if one may say so, while the villagers, especially if you see them in their Sunday best, are delightfully picturesque ; in fact, they seem to have assumed *opera-comique* costumes, they are so smart and gay. The tall sugar-loaf hat and knee-breeches are before you, the gaudy red braces and coloured stockings of the well-known Tyrolese type ; while the women, with their short skirts and neatly-braided hair, add further to the theatrical nature of the picture.

At Schlitters, the first picture is taken. We select the picturesque village street, taking the view diagonally, which permits us to include a quaint wooden belfry, and also allows us to get under an overshadowing roof, which screens the lens admirably. There is a little too much exaggeration of the road and of the side of the building under which the camera stands ; but this may be corrected when it comes to trimming the print. While we compose our picture, and focus, a friend roughly sketches an outline in his pocket-book, so that we have something to remember the scene by when it comes to development. This is very convenient, for, after a month's interval, you frequently forget the nature of your subject altogether ; and, before you know what you are doing, a delicate horizon may be spoilt by pushing development too far ; or details in the shadows of a village picture be lost through not permitting sufficient action. To the sketch is added a remark as to sufficiency of exposure, the time, and any other memoranda that may be deemed desirable. Here is an example of what we mean, which has been copied from our note-book by the phototype process. It is a sketch of Zell-am-See, to which we shall come presently. A helping companion is invaluable to



the tourist-photographer in many ways, as the latter soon discovers when he first begins to work in a foreign land; he not only saves one's time, but one's temper as well. However, in



the Tyrol, and particularly in the Zillertal, the tourist will find the simple village people exceedingly pleasant and companionable.

The first day's walk may be to Zell, where there is a capital inn, the "Post," this village being the principal one in the valley. A fine view of the rushing stream, half river, half

torrent, with Zell among the trees lying beyond, just when the village is first sighted, is likely to make the photographer halt a second time, unless he has not exposed a second plate already upon one of the road-side skittle-grounds, without which no hostelry is complete in this part of the country. Sometimes the playthings are of the most primitive kind, a slender fir trunk cut into lengths furnishing the skittles, while the first best round stone from the mountain side serves for a ball.

Except at Innsbruck, there are no grand hotels in the Tyrol, and in this it presents a marked difference from Switzerland. The inns are for the most part post-houses, with a room for humble guests on the left ("Gast-stube"), and another on the right of more pretensions, usually called the "Speise-saal." These Tyrol inns are very comfortable, and are, moreover, right reasonable in their charges; only, of course, there are not the conveniences nor the advantages (and disadvantages) that the modern hotel affords. The Zillerthalers are very proud of their musical capacity, and you cannot stay an evening in the villages without hearing their plaintive zither melodies or some of their mountain jodels. The waiter is an unknown personage in the Tyrol; but a trim waitress in laced boddice and short skirt, with a courier bag hanging to her girdle to receive the money, takes his place. The waitress is usually a performer on the zither, and during the intervals of waiting will sing you "die Berge von Tyrol," if you behave yourself, accompanying herself on the zither. We have a picture of Julie of the "Post," playing the zither in a balcony overlooking the rushing Zembach; it is a very bad photograph, but we value it highly, for all that.

Still ascending the valley, we reach Mayrhofen. One of the picturesque chalets surrounded by orchard land is here chosen as a fit subject for the camera, and while our friend keeps the landlady talking in the doorway, we manage to secure her portrait into the bargain. It now becomes steep climbing, but as we have left all heavy baggage behind at Zell, and only carry our photographic kit, we get on as well as ever. There is no road beside the foaming white stream, only a tortuous footpath, that winds in and out among gigantic boulders, now passing under threatening masses of overhanging rock shaped like monster grottoes, now leading under trees through shady recesses, full of luxuriant undergrowth, the most beautiful fern gardens that can be imagined. There is not a breath of air to

stir the delicate stems, so we take a picture of the green paradise then and there, a photograph that turns out one of the most successful of our tour.

In two hours the Carlssteg is reached, almost the head of the valley, a rough covered bridge thrown across the foaming Zembach, as it rushes through the rocky mountain gorge. The scenery is grand and wild in the extreme; tremendous masses of detached rock fight with the cascade at every turn, and sheer precipices on either side constitute the upper part of the valley a dark-shadowed defile of magnificent proportions, through which are seen the lofty white peaks of some of the Tyrol giants.

Of course we obtain a view of the Carlssteg, although it is some time before we can get a safe place for the tripod on the brink of the stream. There is a rush of cold air—a blast, it might almost be termed—that is a considerable source of danger to our zephyr apparatus; but by carefully loading the same with heavy bits of granite, picked up at the edge of the torrent, it is at last secured with tolerable safety.

One matter in the day's journey is always a little worrying to the photographer. His day's supply of plates, let it be four or six, he naturally desires to make the best use of; now he may be too chary in the morning in making exposures, or, again, he may be too improvident. When evening arrives, and he is at his journey's end, with one or two unexposed films in his pouch, he thinks how well he would have done to photograph that cascade or wonderful mountain gorge he passed in the morning. On the other hand, if he has lavished all his plates early in the day, the chances are he meets with some tempting subjects in the afternoon when his wallet is empty of virgin films. Now of these two evils we hold it best not to save up one's plates. In the first place, the morning light is usually the best of all lights for photography, and if you meet with subjects that appear good, if you expose your plates, you have the satisfaction, at any rate, that you have wasted none of them. You have had your own way, and that is something.

We return to Zell, and start early across the Plattenkogel Pass to Krimml, where the finest waterfalls in Germany are to be found. The pass is not a high one—between 6,000 and 7,000 feet—but we take a guide to the top to help us with our packs and make quite sure of the way. A Sennerhutte, or shepherd's hut, up here serves to make a capital little photograph, which forms a



pleasant *souvenir* as well, for we are entertained by its owner with brown bread, cream cheese, and cool milk *ad libitum*, in right Royal fashion—hospitality that comes very grateful after a hot and laborious climb.

More useful than an unlimited supply of dry plates to the tourist-photographer, he should remember, is a never-failing stock of good humour. Travellers, and pedestrians especially, should always bear this in mind, especially towards the end of the day, when they are weary, or when matters go “contrariwise,” as Mrs. Gummidge would say. Keep your own counsel, travel steadily, take little with you, start off in good time, and leave your cares at home, is the advice of an old traveller, Philander Von Sittewald; or, as it runs in the original German:—

Wer reisen will,  
Der schweig fein still,  
Geh steten Schritt,  
Nehm nicht viel mit,  
Tret an am frühen Morgen,  
Und lasse heim die Sorgen.

The Krimml waterfalls—there are three magnificent cascades—is a difficult subject to photograph; at any rate, we found it so. If you recede far enough to get out of the way of the spray, then the stupendous mass of white water, as it comes tumbling and thundering into the big cauldron of black rock, loses all its grandeur; while you cannot expose the lens for a couple of seconds in its vicinity without the whole apparatus being bathed in vapour. Our focussing cloth was wringing wet before we could withdraw it, and the only picture of the Krimml Falls we possess is one taken from the summit of the Plattenkogel, in which the mighty fall, at a distance of five miles or more, looks like a brooklet of milk.

But the Krimml inn makes amends to the photographer, for it is the most charming specimen of architectural wood-carving in the district. The balcony is a masterpiece. The ornamental balustrades are wrought so delicately and elaborately, that one hardly knows which to admire more—the skill, or the labour involved. The roof of loose boards is weighted, as usual, with huge stones instead of nails or pegs to keep it down; while another point in its picturesque nature is the heavy timber cross-beams that project here and there from the structure.

It is very cold at Krimml, for the village lies at an elevation

of 3,300 feet, and it is unprotected from the chill winds that seem to blow all day long. In fact, the only warm place is in bed, and one is rather glad to be off betimes in the morning down the valley to Zell-am-See (not to be confounded with Zell-im-Ziller). It is a long and monotonous road, albeit there are charming glimpses by the way of the snowy Venediger and other white peaks, and for this reason we avail ourselves of a conveyance. And here we may mention that on the Tyrol highways carriages are both reasonable and cheap. Sometimes you have a choice of three different modes of travelling—that is, if you happen to be on one of the post roads. In the first place, there is the so-called “Extra-post,” which answers to our old posting. A carriage and pair of horses, with a smart postilion arrayed in shining brigand hat, orange-faced uniform, with bugle complete, costs but tenpence a mile (English), and as the carriage holds four, provided there is little luggage, this mode of journeying is as cheap as it is luxurious. You drive from one post-station to the other, and can break your journey at any one of them (it is usually an inn as well) either for ten minutes, or the night, as you wish. Next, there is the Eilwagen—that is, the mail-coach—which travels as quick as a post-chaise, charging at the rate of about threepence a mile; and finally, there is the Stellwagen, a humbler conveyance, for local people, which stops rather more than it goes on, and altogether travels without much rule or regulation. Nevertheless, a Stellwagen is comfortable travelling in its way, especially if there is no reason for hurry, and you wish to look about you; in fact, so far as we are concerned, we have nothing but good words for it. The charge is frequently not more than a penny a mile, and as you can always walk a bit now and then without delaying your companions, you have more independence than in the case of most public vehicles.

We journey to Zell-by-the-Lake in a Stellwagen, then, and so free-and-easy is our driver, that he thinks nothing of deferring to our request when, coming in sight of the picturesque little village, we ask leave to dismount and to set up our camera to get a view. It is a delightful picture. As you approach, the road runs close down beside the placid water, and the white church and cottages of Zell are seen standing out, as it were, upon a promontory jutting far into the lake. On each side are dark rugged hills rising from the shore, and beyond is a rare

background of silver grey cliffs of the most fantastic outline. These magnificent crags appear hollowed out, and the dainty little town seems set in a casket of silver and black.

Zell-am-See is a Rip-Van-Winkle of a place ; that is, the town is animated enough, but the costumes of the people are of the quaintest and most antiquated. They gaze at you in good-humoured wonder, as they would at wax-work, and when we attempted a view of the street with a glimpse of the cemetery beyond, they crowded round so quickly as to obstruct the horizon. During the exposure, and before we were aware of it, one of the most curious patted the camera gently with his hand, and the consequence was, when we developed, there were four rows of houses instead of two, and a double cross over every little grave.

Speaking of the dead, they have a curious custom in Zell of putting up memorial boards with inscriptions in the streets outside their houses, sometimes the whole front of a shop being covered by these lugubrious inscriptions. The effect upon a stranger is depressing in the utmost, for it is not a cheerful idea to make a dwelling house do duty for a tombstone. This custom one only sees here at Zell-am-See, but the visitor to the Tyrol, and especially the pedestrian, cannot walk a mile along the road without meeting two other marked characteristics having to do with the people's religion, which is Catholic throughout. The first is the number of large painted crucifixes by the road-side, with figures of our Saviour life-size ; these are not only posted in cross-ways, but in fields and plantations, by their proprietors, the erections being more or less gorgeous in point of colour and tinsel, according to the wealth of their owner. The other custom is that of putting a roughly-painted picture, about a foot square, by the roadside, representing any fatal accident that may have occurred near the spot. Now, as these paintings last fifty years and more, and accidents occur not unfrequently, the end is that they accumulate, especially where the road is dangerous. The name of this form of memorial is termed a "Votivbild" or "Maeterle," and to it is appended the request for a prayer or "Ave Maria" on behalf of the soul of the departed. The paintings, crude as they are, all possess that strange fascination which the description of anything horrible always excites. Now it is a man drowning in a rapid stream ; now a waggoner crushed by his horses ; now a woman perished in the snow, &c.



The ambition of the village artist is to show every detail of the accident. The unfortunate victim is depicted, not merely with a serene countenance, but with one betokening absolute indifference to his perilous position; and there is painted over his head a little black cross, to show that his doom is sealed. If there are any lookers-on, they are shown in gay holiday attire, regarding the matter with much interest and satisfaction. On the way to Zell, at a spot where the Stellwagen crossed the stream by a ford, we saw no less than five "Maeterle" of drowned people; while at Zell itself there is a very grand one, representing a boat accident, with a number of bodies lying on the shore, the dead being distinguishable from the quick by the circumstance that the latter have no black crosses by them.

From Zell, our way leads up the valley of the Fusch towards the monarch of the Tyrol—the Gross-Glockner. It is always well, if you include any arduous mountain travelling in your trip, to defer it for a while, until your feet and legs grow accustomed to the work; in making this little tour, there is no snow or glacier crossed for the first ten days—in fact, not until you reach the head of the Fusch valley. On your way thither, you pass the little spa of Fuschbad, where a day or two's rest is very agreeable in the midst of fine mountain scenery. A whole series of pictures may be here secured looking up the valley towards the snowy region of the Gross-Glockner, or back at the grey crags beyond Zell, mountains in the neighbourhood of the Watzmann and the Steinerne Meer.

Ferleiten, at the head of the Fusch valley—we give an outline sketch of it—is a miserable hamlet with poor accommodation at the simple inn; but you must perforce stay the night, as you require a long day to walk over the snowy pass of the Pfandelscharte to Heiligenblut. We secure the services of a guide, who cheerfully carries most of the heavy baggage, and set out steadily on our way at four in the morning. The path grows steep at once, and after an hour's climb you have left all vegetation behind you, and can see Ferleiten at your feet, resembling a Lilliput village, the tiny white buildings set up like toy models upon a strip of grass-green carpet.

The Fusch valley ends in a sharp comb chaining together two peaks, and this comb, which is called the Pfandelscharte (some 9,000 feet English, and reached in five hours from the start), must be surmounted to get to our destination. It is now all

snow as far as the eye can reach, except where rocky crags, black and green, pierce the shining white coverlet. The far-stretching plains up here seem to be cut off from the living



world; there is nothing but glittering ice and smooth snow bounded by gigantic peaks, that seem to have risen up on all sides while you were climbing the slope.

We must have a picture of the order of march, so we ask the

line of pedestrians to halt when half-way up one of the snowy inclines. It is a difficult matter, rather because we naturally want to be taken in the line as well. A strapping young bar-rister we have met at the foot of the pass is put in the van, then comes the guide with his huge burden on his shoulders, then other two companions; and we arrange to take up a position in rear, as soon as we have uncapped the lens. A very small stop is used to lengthen exposure; the focussing cloth is made to shade the lens as much as possible from the glare, and then, having pulled off the cap, we rush hurriedly over the snow to take up a position. We halt behind the others, and remain im-movable, counting five seconds, feeling all the time very un-comfortable, from a knowledge that the camera has all of us before it, and is in charge of itself. How we should like to glance for a moment behind, to see if it is all right, and that no one is tampering with the lens! Then we rush back again, down the snow slope, and nearly overturn the little camera in our anxiety to cap at once. It is not a bad little picture, when we come to develop it, although there is a strange look about our own ghost-like figure, which has not half the vigour of the preceding ones.

Another view is obtained on our descent of the famous Pasterzen Glacier, one of the most magnificent ice scenes in the Tyrol. The photograph is of value as a reminiscence of travel, but it conveys, unfortunately, little idea of the wonderful mass of ice crystals which sweep down the whole side, from top to bottom, of the cone-shaped Gross-Glockner. Here, from the Johannis Hütte, where we place the camera, you see the dazzling glacier in its entire length, for directly opposite rises the peer-less mountain, as spotless as if made of Sicilian marble. Above the Hütte, the Pasterzen is of a pure virgin white, but below it breaks up into huge crystalline masses of translucent emerald. The glacier encircles the rocks at one's feet like frozen billows, and one feels tempted to descend, as it were, to the beach, and toy with the glacial water.

We now enter a pine-clad valley, and, still descending, come once more into the land of the living, passing through pastures fresh and green, and by tiny water-mills and white cottages that deck the banks of the rushing river. The big white church—a cathedral-like pile—of Heiligenblut comes into sight, and at the twelfth hour from starting, we reach the village itself.



The journey quite suffices for a day's work, but in the evening we mark a subject for the camera, to be attempted in the morning. This is no other than the charnel-house beside the church—a scene of the most weird and terrible description. Old crucifixes, figures of human beings in purgatory, and other uncanny objects, were stacked in heaps in this cavern against bones and skulls innumerable, making a picture such as the Belgian artist Wiertz loved to paint. We gave our plate (collodion emulsion) an exposure of three-quarters of an hour, an artist friend, with his pipe for company, guarding the door the whole while; but nothing came of it, we are happy to say, on development.

The inn at Heiligenblut is also rather primitive (they talk of building a better one), and, therefore, a prolonged stay is scarcely to be recommended. Meat is scarce (there was none at all at Ferleiten), and the sleeping accommodation a little rough. A day's walk from the village brings you into the Puster Valley, where there is a railway; but we mean to have another look at the Gross Glockner district, and a peep at the Dolomites, before returning, and so secure a guide to take us over the Katzensteig and Kals Pass to Windisch Matrei.

A guide is again necessary from Heiligenblut to Windisch-Matrei, and it is as arduous a day's journey as that from Ferleiten. You have, indeed, two passes to cross, and a rather difficult bit of walking on the way, called the Katzensteig, or Cat's Path. The latter leads over the edge of a rock, at the base of which, and a few hundred feet below, rushes the Leiter stream. But it is not so dangerous as it seems, and any steady pedestrian would pass it without a second thought. We naturally take a photograph of the Cat's Walk at its worst; and our friends in front, when we cry a halt, do anything but appreciate our discretion in thus causing them to stop just at the nastiest part of the giddy precipice.

The Leiter Hütte, or hut, which we pass soon afterwards, affords a shelter for those undertaking the ascent of the Gross-Glockner, and here a supply of milk and black bread may be had. You are now under shadow of the magnificent bell-shaped mountain, and cross a soft snowy shoulder of it. Here a gap in the mountain side suddenly shows you a whole cluster of frosted peaks, seemingly within stone's throw, they are so close. It is as if you have been searching everywhere for them, as in a game of "hide and seek," looking high and low, round

this mountain and down that valley, until at last you have hemmed them in from further escape, and find the big white giants all huddled together in a corner. "Come on, here they are!" you feel disposed to cry out to your companions.

It goes steeply down hill to the little village of Kals. There are two inns here, but both of them are very so-so, and we rest a couple of hours before assaulting the second pass. It is but a narrow mountain comb that separates Kals from Matrei—the Matrei Kalser Thörl, it is called—but the ascent is very steep during the two hours that it lasts. The top is marked by a wooden cross, and a magnificent panoramic view of snowy ranges greets the traveller on either side. There is the Glockner group of mountains and the Venediger group, the snowy pyramids rising right into the heavens among fantastic cloud masses; green meadows and black pine forests in the plains below enhance the beauty of the snow spires, and the tiny farms and houses grouped about in the valleys, so near, apparently, as to be within pistol shot, induce the belief that you must have discovered fairy-land, and that these miniature habitations and microscopic buildings are the veritable dwellings of the elves and fays children talk so much about. No big rivers or broad torrents are there, but only slender threads of silver, and the little village church below, nitched, apparently, out of white chalk, could be shut up in a pill-box.

Windisch-Matrei has a first-rate inn, with sleeping apartments well furnished, and a good kitchen; hence a stay of a few days is very agreeable. "Mine host" is also a capital fellow, and can give you some good travelling hints. The Gros-Venediger, a magnificent snow-mountain, is very accessible from Matrei, and, if you have time, he will assuredly send you up it. He is a terrible mountaineer, at any rate in theory, and if he has not been actually to the top himself, he has, at any rate, been half way up on two occasions, he assures you, and that is surely as good. We take a photograph of the street in front of the hotel, with a big black mountain towering above it, and include our host himself in the picture; but he holds the result will be unsatisfactory, and for a double reason: in the first place, there is a patch of snow a few feet below the peak, which usually melts in the summer time, and therefore has no right to be in the picture at all; while he himself—in the photograph he is shown not half an inch high—is conscious that his "*Blick war nicht*

ruhig" (his glance was not steady) during the exposure, and hence the composition cannot be perfect. Despite all this, however, the little photograph turns out exceedingly well on development.

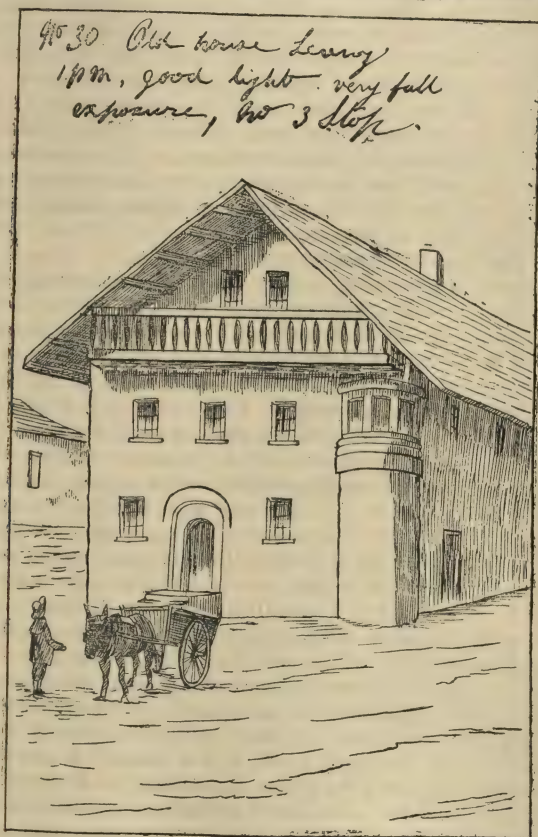
We have spoken, perhaps, a little too disparagingly about the commissariat in the Tyrol. If veal is but too often served up to the hungry traveller, the meat is generally toothsome and well flavoured. But there is trout to be had in the Tyrol, cheap and plentiful. "Will you have them blue or brown?" the neat-handed waitress usually asks you, and she means exactly what she says. When boiled, the delicate fish are of a pale blue tint; while fried or baked they naturally enough assume a brownish hue. Cooked either way they are delicious, and form a welcome change or adjunct to a veal and salad dinner. There is another dish, too, that they understand perfectly in these parts—namely, pancakes, and these can be obtained when meat and butter are not forthcoming. *An eingefülltes Mehlspeise* (a pancake stuffed with preserves) will satisfy anybody, and is a sound foundation for a day's walk. For drinking, there is capital beer to be had throughout the Tyrol, as well as palatable red wine (Tiroler), whose only drawback is that it is too good.

To the little market-town of Lienz is a march of sixteen or seventeen miles. Lienz is a most quaint place, with old public buildings surmounted by mosque-like cupolas, that give some parts of the place quite an Eastern look. Naturally, we take a picture of these cupolas, as also of another ancient edifice, an old inn. We give the sketch of the latter made by our artist friend in his note-book, and reproduced by the photo-etching process.

In setting down particulars, it will be seen that the number of seconds of exposure is not noted, but instead, the words, "full," "fair," or "short" exposure are employed. By having recourse, moreover, to the terms "very short exposure" and "very full," we get five degrees, which are quite enough for anybody. There is only your own judgment to go upon in the matter; and we believe that if the time of day is noted and judgment passed at the time, in the above terms, this is a better criterion, when it comes to development, than if the exposures were expressed in seconds. The latter plan often misleads, because the question of morning light, afternoon light, sunshine,



or diffused light, have so much to do with the matter. A photographer can do no more than look around him, and, knowing the capabilities of his lens, his stops, and his plates,



note then and there whether, in his idea, the exposure has been long or short.

And just another by-the-bye, while we are about it. The tourist photographer does well, as a rule, to spend his plates

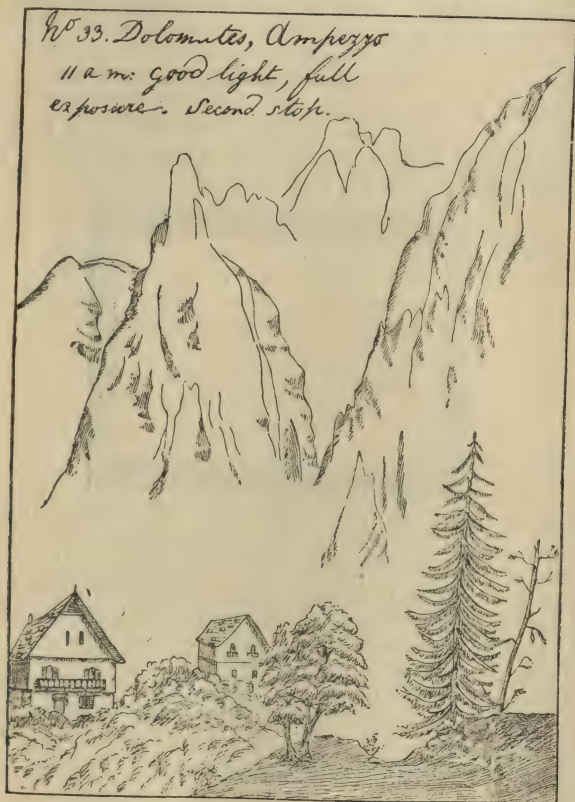
not upon the wonders of nature so much as upon subjects characteristic of the people and places he is visiting. A big mountain is only a mountain, after all, and a monster cascade is but a cascade; when you look at photographs of them, they might have been secured in the Tyrol, Switzerland, the Pyrenees, Norway—well-nigh anywhere; but it is different if you photograph village streets, primitive churches, quaint cottages, and the like; these pictures hereafter are much more interesting, and they have each of them a story that comes vividly to the mind as you look at them. With gelatine plates at his command, the photographer, too, can now-a-days very well include figures in his pictures, without running much risk of spoiling them by shy children or giggling women, who used to be the bane of long exposures.

Lienz is in the Puster valley, and a railway connects it with the main line that runs over the Brenner pass between Germany and Italy. But on the way back we are going to pay a short visit to the Dolomite Mountains, those silver grey crags which have for the most part proved inaccessible to the hardest mountaineer. We take rail to Niederdorf, and put up at the Höllenstein inn, a suitable name enough for photographic travellers, since Höllenstein is the German for nitrate of silver. Niederdorf is at the opening of the Ampezzo valley, and all the way to Cortina—a twenty-five mile walk—there is a succession of beautiful scenery. If you have but a few days to spare, you may very well walk one way (leaving your heavy packs at Niederdorf), and drive back by the diligence, which goes twice a day. Once fairly in the valley, you are surrounded by the mighty jagged spires of the Dolomites, which rise in fantastic shapes on all sides. Here is a view taken at the opening of the Ampezzo, which conveys some idea of their grandeur.

Your way lies through a magnificent pine forest (the little Toblau lake sparkling in the sun like a beautiful turquoise fittingly set in the silvery crags is a wonderful picture), and presently you come in sight of the famed Monte Cristallo, standing alone in magnificent splendour, and almost barring one's path in front. All the way there is a succession of grand and ever-changing scenes—now wild and gloomy, now supremely soft and pastoral.

The changing of plates must, of course, always be done at night, before retiring to rest. The plates should be packed up—

in fours or sixes, according to whether you carry two or three double-dark slides in your pouch ; there is then no need of opening a packet more than once. You take out the fresh plates, and



put up exposed films instead. A yellow and ruby paper to fold them in first, then some tin-foil, and finally a sheet of brown paper, blackened on the outside, should suffice to keep from harm even the most sensitive of gelatine films. Tin-foil is apt to break and get damaged when worn, and for this reason new foil



should be employed at first; and as it is but once subjected to unpacking and packing, it ought not to suffer injury thereby. The plates should be packed in pairs, face inwards, and between the films a skeleton frame of cardboard should be placed, to keep them from harm, as shown in our sketch. The pairs themselves need not be separated.

The *mauvais quart d'heure* occupied by the tired photographer in changing his plates, when his companions probably are fast asleep, is the most disagreeable part of his lot. Our plan is to do it absolutely in the dark, for you cannot well trust a light, however feeble. Make your bed your work-table, for it is



always available, and it is very soft. Place everything convenient to hand, as you are accustomed to have them, never making a change, and then, with a single packet of plates before you, the dark slides, and a broad camel's-hair brush handy, to dust the faces of the films prior to enclosing them in the slides, your troubles are reduced to a minimum.

From Niederdorf the rail takes you to Franzens Feste, a fortress guarding the neck of the valley (there is no photography permitted in the vicinity), and here is the junction with the Brenner line. Innsbruck and Munich are reached in a few hours hence, and the way home is straight enough.

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## No. II.—A TOUR IN THE THURINGIAN FOREST.

THE photographers of Germany have of late made it their custom to meet once a year in convention, and on a recent occasion the meeting was held at Eisenach, in the Grand-Duchy of Saxe-

Weimar, situated in mid-Germany. Eisenach, a little old-fashioned town, is located in the very midst of the Thuringian Forest, and may be taken as a convenient head-quarters whence many interesting and delightful tours can be made. That it is a holiday ground little known to the British tourist will of itself be a recommendation ; while the fact that it is the home of many of the legends known to us through the Brothers Grimm invests it with a romance equal only to that possessed by the Harz Mountains and the Black Forest.

Thuringia makes a convenient trip for a fortnight. By the Flushing route, Eisenach can be reached in thirty hours, traversing Hagen and Cassel. There are some capital hotels there, of which the Rautenkrantz is our favourite ; for Eisenach has many visitors in the summer, although it finds no place in Mr. Cook's tours. Indeed, the Thuringian Forest is in no way an obscure district. It is classic ground in history—the cradle of Germany—for its Landgraves, whose castles still top many a height, were the first great independent chieftains. The late Prince Consort was bred and born in Thuringia, and much of the beautiful country is described by Her Majesty in her book relating to the early days of the Prince Consort.

When we first knew Eisenach, more than five-and-twenty years ago, it might have been taken for a bit of old London during the last century, with its crooked, queerly-paved streets, its cramped buildings, scanty oil lamps, and antiquated watchmen. Long, dark thoroughfares were lighted—if one may use the term—with a couple of feeble lanterns, one at each end of the street, swinging on wires across the road, and supplied with oil sufficient to last till nine o'clock in the evening, for at that hour all good people were supposed to be in bed, and, so the authorities argued, it would be foolish indeed to burn oil for the bad ones. There are still plenty of quaint dwellings and relics of old-German architecture that would make valuable camera pictures in the town, albeit it has been considerably modernized of late ; and two such objects we may at once point out—viz., the residence of Martin Luther, and the house where Sebastian Bach, the composer, was born.

But it is the neighbourhood of Eisenach to which the photographer will turn with most interest. The black pine woods and forests of beechen green that clothe the Thuringian mountains, the deep-shaded vales, the moss-grown defiles, and

cool grottoes, their soft, verdant walls decked with purple fox-glove and yellow gentian, the grey ruins that crown the hill-tops, and the pleasant shooting-boxes that here and there peep forth from the greenery—all these will serve to make a holiday tour in this district pass agreeably. As tourist-photographer you should be the happiest of mortals in such a paradise. Enjoying yourself on a summer's tour, it is some satisfaction to know that you can carry back with you a reminiscence that will serve to call up the pleasures of your journey once more; to know that you can bring home a cap-full of bright sunshine with you, stored up in the film you are exposing; to be assured that you have not seen the last of the glittering landscape at your feet, that splashing waterfall among the leaves, or the quaint old village through which you have just strolled.

One of your first plates will be exposed at the old Wartburg.



H. P. Keith

THE WARTBURG

The sturdy castle, with its walls standing grey and grim, as they have done these seven centuries past, almost overshadows the town. It stands on a leafy pedestal, as proudly as in the days when, an impregnable Burg, it sheltered from harm worthy Martin Luther. The Castle of the Wartburg was in the great



Reformer's mind when he exhorted all to put their trust in God, as in the stout walls of a fortress.

"Ein feste Burg ist Unser Gott,"

is the beginning of Luther's famous hymn.

The Wartburg appears at its best, to our thinking, not from Eisenach, but from a point exactly opposite the town, as it is sketched here by the late Mr. R. P. Leitch; the walls are steeper, and its position, rising from the waving foliage, the only pile in the undulating landscape, is most romantic.

There is plenty to see inside the castle. A sentry keeps watch and ward up here, pacing the ramparts beside a battery of old guns. The guns and the sentry are of some use, though, for he can command a view over the whole town, and it is his duty, on the first sight of a fire, to discharge one of the guns, and thus call the attention of the burghers below. You enter the castle through a heavily mailed gate, and then immediately on your right of the courtyard is the quaint tenement that Luther inhabited, and where he translated a large portion of the Bible. It is difficult to secure a view of the house, because the courtyard is so narrow; we carried our camera some yards beyond the house, and then secured a view looking back at the portals of the castle, and showing Luther's house on the left. The room that the Reformer inhabited is still intact, his bedstead, footstool, and jolly old flagon; but it was not easy, we found, to get permission to take a picture of the interior. He must have been a cheery, light-hearted, genial soul, good Martin Luther, a friar who took anything but a black view of the world, for his poems and hymns tell far more about smiling nature, its bright green woods and chattering songsters, than of vaulted cell and cold penitential observances. It was while on his way home from the Diet of Worms in 1521 that the Reformer was waylaid, and compelled to exchange his monk's robe for the trappings of a soldier, in which he was carried, half friend, half foe, to the Wartburg. A legend tells us that while in his room here, translating the Bible, the Evil One came, time after time, to tempt him to desist, until at last Luther, quite out of patience, hurled the inkstand at his tormentor. The ink obviously did little damage to Satan's dusky skin, but it stained the white wall beyond, and there are marks of it still; only the blackened plaster has since been removed by relic hunters, and

now there is but a big hole in the wall to testify to the event.

The rest of the castle is for the most part modern, having been restored by the present Grand Duke. The halls are worth a visit, however, especially the Hall of Song, which stands, it is said, upon the same spot where the famous singing contest of the Minnesingers or troubadours took place in 1207, an incident utilized by Wagner in his opera of *Tannhäuser*. At this contest, which was instituted by Duke Hermann, passion waxed so high among the Minnesingers that it was decided the least skilful of them should die. Walter von der Vogelweide was the victor, and Heinrich von Ofterdingen the vanquished; but although measures were taken to erect a scaffold on the castle, the latter was in the end spared his life by intercession of the duchess. When Walter von der Vogelweide died—he was no character of fable—he left a sum of money to be expended in the purchase of seed to be strewn upon his grave that the birds might gather there, and four cavities were wrought in his monument to supply the warblers with water.

Elizabeth's Fountain, just at the foot of the Wartburg, should not be forgotten by the photographer. The old stone structure is green with moss, and the spot so over-grown with trees and foliage that it is easily passed over. You will want a lot of exposure, for no daylight comes from above, only the green sheen that passes through the verdant foliage; we exposed a collodion emulsion plate for three minutes, and could get no result. But a little trouble may well be taken over the subject, for this same Elizabeth it was who spared the troubadour's life, and the spot is the scene of a touching legend. As Elizabeth was returning from Eisenach one day, on an errand of mercy, which was no other than that of conveying baskets of food to the sick and wounded of an enemy besieging the castle, she was met by her husband, the Landgrave. He had long suspected Elizabeth's errand, but, despite entreaties and threats, she still continued the merciful mission.

"What have you there?" he cried angrily, tearing back her cloak.

The basket became uncovered before his eyes, and lo! its contents had changed to white roses.

A pleasant excursion is through the Mary-Valley, or Marienthal, and Annathal to Wilhelmsthal. A little brook

runs through the green meadowland of the valley, and on both sides are picturesque hills and big grey rocks. On one of these is a capital M, in very large type indeed, that may be seen for miles. You must have a photograph of this, for the big rock above is called the Princess Rock, and thereby hangs a tale. A princess is imprisoned therein, so the story goes, kept in durance vile by some wicked old genius who allows her "a day out" but once in a hundred years, and then only at midnight. So delighted is she at seeing the beautiful world again, even in the dark, that she is invariably taken with a fit of sneezing, crying "Tischeu" no less than twelve times running. Should anyone happen to be there at the time, and politely say, as is the custom in Germany, "Gesundheit," or "Wish you better," in reply to every sneeze, then the princess will be released. Nobody has done this yet, but once a carter, it is said, passing along the road below with his team, and hearing violent sneezing going on, did answer, "Wish you better," as many as eleven times; but when it came to the twelfth, his patience was exhausted, and he called out rudely, "Oh, go to the devil!"

Further on is the Anna Thal—the rock at the entrance, marked with a capital A—apparently a moss-grown fairy grotto, but in fact a narrow defile and thoroughfare. The way hither has been through the most romantic of glens, over-shadowed by forest trees, and if any pictures are taken, exposure, exposure, exposure, must be the watch-word. Even when rays of sunlight escape the leaves overhead and fall into the deep hollow way, dappling the soft green moss with patches of gold, the light is exceedingly non-actinic; in fact, we confess, that repeated attempts on our part have never resulted in a well-exposed plate. The Dragon's defile, as the narrowest part is called, it is impossible to depict in the camera, for the path is so narrow that two people cannot walk abreast. It is simply a cleft or fissure in the rock through which you walk, the strip of blue sky above being at times quite excluded by the verdant creepers and luxuriant greenery that fall in festoons overhead. Supreme quiet reigns in this cool retreat, its green walls of moss tufted with ferns and glistening with drops of moisture. For a hundred yards or so this cold grotto-like pathway continues; then presently you emerge again into the beech wood, the warm air floating towards you laden with the perfume of meadow-sweet and wild briar.



Another object on your way to Wilhelmsthal worthy of photographing is the big hollowed rock—Landgrave's Hollow—where a party of horsemen are said to have lain *perdu*, when contemplating an attack on the Wartburg; while Wilhelmsthal itself, with its lake, gardens, and homely little palace, will make some nice little pictures. There is a tolerable inn here, where you can refresh before returning to Eisenach, the walk back being through the Landgrave's defile, a forest pathway almost as romantic as that through the Annathal.

A three hours' walk from Eisenach brings you to the little market-town of Ruhla. Ruhla is noted for its meerschaum pipe factories, and there is not a tobacconist, however humble, in this country, who has not heard of Ruhla meerschaum. The way lies past the bald, long-backed Hörselberg, where, as everybody acquainted with Tannhäuser knows, the goddess Venus holds her court. A shrubless, uninteresting mountain to look at, one scarcely feels tempted to waste a film over it; still, the other day, when we witnessed Tannhäuser at her Majesty's Theatre, and saw the Hörselberg depicted like one of the sharply-peaked Dolomites, we certainly wished we had a photograph to forward to the scenic artists with our compliments. The Wartburg, too, was shown in the scene like a red-brick Elizabethan mansion, we remember—a still more unpardonable error. If a poet or composer localizes his legend in some romantic district, in order to add to its interest, surely it is not for the scene-painter to do his utmost towards spoiling the story again.

A few miles past the Hörselberg, where a bit of grey cliff is seen through an opening in the green trees, is the Wittgenstein, of which you certainly must get a picture. If you can secure a little out-building or cottage in the foreground, all the better; for, truth to tell, it will help to make a picture, for the rock and foliage are scarcely material enough. There used to be a castle upon the rock, so they say, in which a baron once lived with a lovely daughter. The lovely daughter was, of course, in love, and every evening a dapper young knight came a-riding to see her. There was to be an elopement, only the baron found it out just in time, and slew the cavalier as he rode towards the castle to fetch his bride. The body was brought to the young lady, and, as was only to be expected,

of her, she died outright at the sight of it. For a long time afterwards, the slain knight came riding a coal-black charger to the Wittgenstein at night, wandering through the castle searching for his lost love; and it was only with the aid of the Evil One, that the baron was at last successful in banishing him to another height—the Rittersberg—which lies not far off, and where he is still to be met in the small hours upon his sable steed. The princess, however (for so she is usually called now), still inhabits the Wittgenstein, and she is evidently a person well worth knowing; for one night some musicians returning home to Ruhla stopped at midnight under the rock, and serenaded her. Scarcely had the first note sounded than a little old man, with a grey beard, appeared, and asked for whom the honour was intended?

"The Princess of Wittgenstein," was the reply.

"Very good!" said the dwarf; "play on!"

The musicians obeyed, and gave the princess such a concert as she had not heard for many a day, and when it was all over, out came the dwarf again, and presented each with a freshly-gathered sprig of oak. Some toyed with the branch, and pulled off the leaves one by one, while others carried them awhile, and then threw them heedlessly away. Only one pinned the twig carefully in his hat. He soon forgot all about it, however, and he was startled next morning when his wife asked him what the yellow thing was he brought home with him last night; then he came to look at it more closely, and found the oak twig had turned to burnished gold. The others, of course, ran off to search for the leaves they had thrown away, but the branches were nowhere to be seen.

Ruhla is full of quaint pictures, the houses, built of black oaken beams and white plaster, being peculiarly well adapted to the camera. It is a long straggling street at the base of a green valley, and on either side rise smiling gardens and verdant woods. A clear little brook runs through the middle of the street, dividing the Duchy of Saxe-Weimar from that of Saxe-Gotha, so that the opposite rows of houses belong to two different dukedoms.

One of the principal heights of the Thuringian Forest, the Inselsberg, some 3,000 feet high, is close to Ruhla. Indeed, you can ascend it in three hours hence. There is a capital

view of the Thuringian Oberland, and a good hostelry now exists, where one may pass the night comfortably. A carriage drive leads thence in a couple of hours to Rheinhardts-brunn, where the Duke of Gotha has a palace, and where his brother, the late Prince Consort, resided for many years before he found a home among us.

Rheinhardts-brunn is well worth visiting, with its castle and pretty flower gardens hidden away in the depths of a thick forest, like Rosamond's bower. The patches of green meadow land and mountain streams that make this portion of the Thuringian Forest so picturesque, render it also pre-eminently a game country. Deer are still common in Thuringia, as are also wild boars, while the roebuck is to be met with very frequently. Even bears are not unknown, and at the Wartburg, some years ago, was an animal that had been captured in the forest.

A pretty spa—Bad Liebenstein—is not far off, reached in a short drive through the forest roads. In the summer there is quite a fashionable company here, and as Saxe-Meiningen is close by, the Meiningen dramatic company, which made a sensation in London recently, frequently come over to play. But the place is a little too trim to please—we secure a photograph of the Hotel Müller, which looks like a palace, so that we may boast a bit of its grandeur to our friends when we get home—and the photographer will do better to take his camera into Altenstein (another principality), three miles off, where there are some wonderful natural rocks and a cave of colossal dimensions.

From Liebenstein, by rail and trap to Schmalkalden—a most picturesque town, but very dirty—and thence on foot to Oberhof, leads one into the Oberland of Thuringia. Let not the photographer in his wanderings hereabout, when a day's journey may take him into three or four different dukedoms, omit to get a picture of one of the old toll-bars or frontier-bars, which still exist in many parts of the country. They are "bars" in fact, as well as in name, and they are oft-times very ingeniously constructed. They are weighted at one end, generally with a big stone which keeps the bar open, while a chain at the other extremity permits the bar to be pulled down with the utmost ease. Here is a picture of such a one. The Germans are





ON THE FRONTIER.

a somewhat phlegmatic people, and like to take things easily, and toll-bars are therefore usually so constructed that the toll-keeper need not go out of doors to close the thoroughfare; and he generally expects those who pay toll, to hand it in to him at the window, so as to reduce his trouble to a minimum.

Of the inn at Oberhof—the village stands at as high an elevation as Chamonix—we take a picture, but not of the duke's shooting box (we forget, by the way, which principality we are in, we have changed so many times), for we find it to be, indeed, nothing but a square box-like edifice of white plaster when we have brought the camera to the spot. The wind blows very keenly up here, and the efforts we make to keep our little camera steady are not very successful. It will not bear more than a few pounds' weight of granite, and these fail to give perfect rigidity. Absence of contact between the base of the camera and the triangle is often a cause of shaking, and we have found the wedging of paper or of a rubber washer between to improve matters vastly. But the best plan to secure rigidity is to have a camera and triangle—or, better still, base-board—so true, that perfect contact is ensured throughout. One wants the camera to rest upon as broad a base as possible, and for this reason the ball-and-socket joint met with in many French cameras is unsuitable for out-door work. They are convenient, and may be serviceable, if ball-and-socket are pretty big, for the studio; but directly the apparatus is exposed to the least wind, it shivers like an aspen leaf. To the out-door photographer, stable apparatus is indispensable, and one of the first things to be done with a new camera and stand is to see that they fit closely together, and that the camera is upon a tolerably broad base.

From Oberhof, another day's walk in the forest, over the Schmücke, where there is a better inn than at Oberhof, and a most delightful view, leads to Ilmenau. This little town was a favourite resort of Goethe, and on the Gickelhahn hill, up which we climb, is a little summer-house where the great German poet dwelt, and where he wrote many of his poems. In fact, his Ode to Night, or *Nacht-lied*, was scribbled one evening on the door of the wooden erection, and from time to time he was wont to renew the pencilled characters. After his death, the authorities, anxious lest any harm should come to the relic,

had the handwriting photographed, and it is very well the precaution was taken, for but a few months afterwards the house, or a great portion of it, was destroyed by fire. Here is the poem:—

“Ueber allen Gipfeln  
Ist Ruh’  
In allen Wipfeln  
Spürest du  
Kaum einen Hauch.  
Die Voegel schlafen im Walde;  
Warte nur balde  
Ruhest die auch.”

The little hut has been renewed, and, setting up our camera among the pine stems, we secure a picture of the primitive habitation. It is quite at the top of the hill, and, as far as the eye can reach, there are the waving pine tops over which Goethe must ofttimes have gazed when he took up his solitary habitation here in the Thuringian Forest.

We have left one of the finest “beauty-spots” to the last. This is Schwarzburg, a sylvan retreat in the principality of yet another princekin—His Serene Highness of Schwarzburg-Rudolstadt. Schwarzburg is within a day’s walk of Ilmenau; but, as the walk is not very inviting, we recommend a drive. Schwarzburg has a palace and a very good inn, and from the hostelry you enjoy one of the finest forest views in Europe. We may say that not even in the Black Forest have we beheld such leafy luxuriance, such a vast wealth of undulating foliage. It is as if one were surrounded by a sea of waving boughs and dark green branches, the palace of gleaming white upon one of the eminences standing out like a rock in mid-ocean. A solitary fox, his long tail sweeping behind him, may be seen scampering across some deep-shadowed vale, and roebuck in twos and threes come out to feed in the soft green glades that fringe the forest. Schwarzburg has acquired a great reputation of late, and therefore hotel expenses are rather heavier than in Thuringia generally; but you may dine off wild boar or forest venison, and drink better wine than they give you at most of the hotels on the Rhine, at a less cost than these pretentious hostelries are in the habit of charging.



## No. III.—A VISIT TO THE ITALIAN LAKES.

"THE Italian lakes may be done in a day; you start early from Milan to catch the first boat from Como, land at Menaggio, take omnibus across to Lugano lake, steam from Porlezza to Lugano, whence a trap is taken to Luino, on the Lago Maggiore, where you arrive in time for the last boat to Pallanza or Baveno." This was the advice given us, we remember, exactly twenty-five years ago by a travelling Briton who was "rushing" the Continent, and to whom we had turned for advice; and if we repeat it here, it is not to urge any of our readers to take it, but to show how convenient to one's hand the Italian lakes lie. Moving leisurely with a camera—and a camera, if it makes one move leisurely, has, at any rate, that advantage—you can see the lakes very well in a week, so that the tour may be taken as an addendum either to a Swiss, Tyrol, or Italian trip.

Coming from Switzerland you may either take the new railway over the St. Gothard, or, if you prefer the old-fashioned diligence travelling, which has much to recommend it, cross either the Simplon or the Splügen. From the Tyrol, the best plan is by Verona to Lecco; while if you are in Italy, Milan makes the best starting point. We will choose the last-named city, its many-pinnacled cathedral, each pinnacle a statue of white stone, being one of the most charming architectural objects at which a camera can be levelled. An hour's journey brings you to the shores of Lake Como, and there we take steamer forthwith. The town of Como has little to recommend itself to the photographer, who will do well to make his first stopping-place either Cadenabbia, Bellaggio, or Menaggio. All these spots are within a couple of miles of one another, and are delightfully situated beside the deep blue waters. Our quarters have always been at an *albergo* at Menaggio; for from the terraced vineyards above the little port is seen a panorama that, in our experience, has not its rival in Europe. There, in the clear sunshine, lie the azure waters at your feet—a glorious mass of colour, dotted here and there with tiny white-canopied boats. To your right is the green promontory of Bellaggio, dividing the rich blue expanse into two portions; while right opposite, reaching down to the verge of the lake, is

the bright little town of Varenna. Along the shores are picturesque villas, half hidden by the massive foliage that fringes the blue water. The upper part of the picture is filled with the velvet outline of a range of hills that rise high above the lake, while as foreground are the green clustering vines that shut out Menaggio, with the exception of its diminutive port, and the sailing craft drawn up upon the strand.

This picture we have in two successive years sought to do justice to with the camera, but in vain; and here we may at once say that in no country is photography so disappointing as in Italy. The wealth of colour and gorgeous contrasts that seduce the eye are naturally lacking in our sun pictures, and it is the former that is so characteristic of Italy. Still, a picture of Mr. Woodbury's which we have seen—he has fixed his point of view nearer Cadenabbia—reproduces the soft sweetness of the picture we have attempted to describe, and indicates much of its charm. He has secured the trellised vines as a foreground, and loses none of the beauty of Bellaggio Point.

The arm of the lake on the other side of Bellaggio is termed the Lago di Lecco, the town of Lecco being romantically placed at its termination. A charming view of the town may be had from the opposite shore. We embarked camera and stand in one of the white-canopied boats, and landed whenever a presentable picture presented itself. As the boats are flat-bottomed, they are easily dragged from the water, and we frequently employed our craft in this position as an attractive and steady foreground. The tiny white houses of Lecco, the line broken by green tufted trees, are so bright and clear seen across the placid lake, that Lecco looks like a fairy city, the idea being still further countenanced by the lofty and massive mountain rising beyond, whose every outline falls upon the lake.

The northern end of Lake Como is flat and marshy, so there is no need to visit it; but if you take the camera ashore at Bellaggio, be sure you secure a picture of the town of Varenna opposite, whose spires and buildings seem to rise out of the still water. The trim villas at Bellaggio and at Cadenabbia, with their white marble landing steps, gay flags, and numberless verandahs, are too modern and too town-like to tempt the photographer; but some of the village ports, with their

swarthy sailors in striped shirts and broad straw hats, will make a picture.

From Menaggio it is a nine mile walk through green luxuriant country to Lake Lugano. The deep greenery of the vineyards and maize fields are most refreshing to the eye, for it is generally very hot hereabouts. The sunny land of grapes and figs is before us, and a more rich and fertile country it would be difficult to conceive. At times the road leads through the narrow street of a village, and children with legs and arms as brown as mahogany come clustering round with a plaintive cry of "*Carità, Carità!*" In the background are dark-eyed women, and black-bearded men whose attire requires merely the addition of a belt and a pair of pistols to make them into brigands of the conventional type. Indeed, we are now passing a country as famous as that of Rob Roy in Scotland, for around the shores of the Lake of Como and Lecco passes the action of Manzoni's world-renowned work, "*I Promessi Sposi.*" These men, in their rough picturesque costumes, we can well picture as the Bravi, or outlaws, that the Italian Sir Walter Scott has described; and the mountain pathways, rocky terraces, and green sequestered nooks we pass, are fitting scenes for the enactment of a drama like "*The Betrothed.*"

Strong stone-built dwellings, bearing a date several centuries back, with coats of arms now crumbling to decay wrought over their lofty portals, and delicate green vines climbing about the portico, and seeking an entrance through the barred windows; little white-washed cottages, with painted frescoes executed by the village artist, and representing some saint or holy personage; tiny chapels, with altar-pieces and models of our Saviour on the Cross—such are the most striking objects in the villages and hamlets we pass through.

Half-way, we come to the little Lake Piano, beyond which a glimpse of Lake Lugano is seen. You cannot do better than set up your camera here on the high road, at the moment you sight the little lake. A farm out-building serves for the left of the picture, and then you look at Lake Piano through a gap in the trees, which serves to frame the sheet of water in a most picturesque fashion. The border of the high road which becomes a portion of the foreground does not detract from the view, for it helps further to localize the spot. Indeed, with



the little picture lying before us now, we can realize very keenly our tramp along that pleasant road.

There is a steamer from Porlezza, on the shores of Lake Lugano, to the town of Lugano; or if you have time, and there are several in the party, it is not more expensive to be rowed there. The journey, in these latter circumstances, takes but two hours, and it is a most pleasant one, gliding close under the precipitous banks, and almost under shadow of the leafy fig trees which seek to dip their dark green branches into the cool water. Here and there you pass a cluster of cottages hanging like swallows' nests to the high banks, with which the only communication is by water, for the sides of the lake are too steep for any road between Porlezza and Lugano. These village scenes are most inviting to the photographer, but they are all so picturesque that it is difficult to make choice. You are now on the confines between Italy and Switzerland, so that it is well to make no mystery when you land with your apparatus, for fear of raising the suspicions of the Italian Custom House officers; the Swiss Custom regulations—Lugano is in Switzerland—are not so strict.

That green smooth-topped hill, shaped like a bell, rising precipitately from the shores of the lake at the foot of the glittering little town, is the Monte Salvatore; it is but two thousand feet high, by no means an arduous climb, and commands a magnificent view of the lovely district below. From the top you seem almost surrounded by water—for the mountain is on a promontory almost running into the lake—and beyond are green fields and vineyards; far away to the north may be seen the snowy spires of the Alps. The violent contrasts between the dark green and the hazy snow outlines are difficult enough to manage in a photograph, and only skilled photographers are likely to succeed with such a scene.

Some quaint bits of Italian architecture are to be found in Lugano itself, with which the photographer may busy himself during a brief stay. To Luino, on the banks of the Lago Maggiore, is rather further than from Menaggio to Porlezza, and, if it is hot weather, as it usually is, we recommend a conveyance, which is easily found. The country is still of a luxuriant green, the road, for the most part, overshadowed by trees and shrubs of magnificent growth. Steamers ply fre-

quently on the Lago Maggiore, and to Pallanza—an Italian town with arched market-place and piazzas—is but an hour's journey.

Maggiore's banks are not so lofty and picturesque as those of Lugano and Como; but the gorgeous colouring of the shores at eventide is not to be surpassed. The translucent, ultramarine water, with the white cottages and villas at its margin—apparently of white marble—is a magnificent sight, and art aids nature in the colouring wherever it can. The smart steamers of the lake are manned by grand officers in gold-laced caps and white trousers, and the flat-bottomed wherries drawn up on the sunny strand, with their snow-white canopies, red cushions, and coloured flags, make the landing-places gay and picturesque to a degree.

The photographer, like most other visitors, will be tempted to visit Isola Bella, one of the Borromean islands, which is famous for its tropical plants and shrubs, for its terraced gardens where myrtle trees, aloes and cacti, as well as the sugar cane, may be found growing. But he may well leave his camera behind him, for the gardens are very trim—inclined to be mathematical, in fact—and scarcely likely to give a satisfactory picture. In any case, permission should be asked before landing, for Isola Bella is private property.

Pallanza is within a few hours' drive of Domo d'Ossola, at the foot of the Simplon, or the St. Gothard railway may be reached by taking boat to the northern end of the lake.

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#### No. IV.—BY FJORD AND FJELD IN NORWAY.

THERE are two ways of getting to Norway: you may go there by boat direct from Hull or Leith, and this is the cheapest and most direct way; or you may journey *via* Copenhagen and Sweden, a picturesque route enough, and to be recommended especially to those who love the sea most from a dry-land point of view. If you go by water it is best to land at Bergen or Trondjem, on the western coast, for here are situated the grandest fjords; but coming from Christiania, there is the advantage

that you traverse the rugged Fille Fjeld, as the southern part of the Scandinavians is termed.

We made the journey by Denmark and Sweden, and in this way not only got a glimpse of those countries, but were able to secure some photographic sketches of them into the bargain.

In forty-eight hours, travelling by Cologne and Kiel, you are in Copenhagen, and thence a steamer brings you in a couple of hours to Malmø, the most southern point of Sweden. Travelling by rail, if you do not go by express, is of a very free and easy kind, and during the journey to Christiania, the periods of waiting are frequent and long. At Falköping, where a rest of two hours is permitted, we sallied forth with our camera and secured a view of the wooden-built village, located, of all places in the world, in a wilderness of big rocks. We chose some of these massive boulders for a foreground, showing the pine dwellings beyond, and now that we look at our picture, we marvel still more at the natives taking up their abode in such an un-get-at-able spot. They would certainly be proof against any sudden rush of cavalry, but no other advantage is apparent from the situation.

Of Svarta in Sweden we have another view, secured while the engineer leisurely repaired his locomotive and took in water; and of Amot lake, a placid water bordered by undulating forest land and green hills, we have also a picture, albeit the wooden roof of a railway building—we set up our camera on the platform during a half-hour's wait—rather interferes with the foreground. You do not get into Norway until you are within a few miles of Christiania, the division of the twin-kingdoms being plainly marked by a broad belt of open land which has been cut through a dense forest of pines to indicate the boundary.

The cold granite buildings of Christiania remind one of towns in the north of Scotland. There is little of interest to depict in the camera, for the public buildings are square and modern, and the streets offer no characteristic feature. But the outlook towards the Christiania fjords makes a delightful picture; the craggy headlands of grey rock jutting out of the smooth water, and the forest-clad hills, their foliage in many parts sweeping down to the very edges of the fjord, constitute a scene especially Norwegian, and give one a foretaste of what Scandi-



navian scenery is likely to be. Perhaps the best view of the Christiania Fjord is obtained from the roof of the king's palace.

By rail and boat to Hamar, and thence we begin our journey to Bergen and the west coast. But a word on Norway-travelling before we start. When once in the interior, there are but two ways of locomotion, by foot or by carriage. The carriage only holds one—there are sometimes double conveyances to be found, but not frequently—so the passenger must drive himself. It is a little shell or cup, perched upon a couple of shafts, the recess being large enough for your body, while the feet rest upon supports like those of a “trotting” cart. The carriage is hired like the old post-chaise, by the stage, so that if you are tired of walking at any time, or wish to get over your journey fast, the convenient little vehicle is at your disposal. So far, then, in respect to conveyances; now as to accommodation. There are no inns or hotels in Norway except in towns and large villages. In lieu, there are so-called “stations.” The stations are generally good farm-houses appointed by government to receive travellers, and they are at convenient distances of about eight or ten miles on the road. There are comfortable reception rooms in some of them, and good sleeping accommodation, and here it is that you may hire your carriage. There are ordinary stations and “fast” stations, the difference not only being that the accommodation in the latter is much better, but that at the fast station the owner is bound to have horses ready for the traveller, while at the ordinary station you must wait till the steed has been caught on the hill-side, or brought home from the plough. Another thing should be noted in respect to these “stations”: the traveller must remember he is not lord and master, as in an hotel; he is simply there on sufferance, and it is the owner of the farm-house to whom he is under an obligation. So he had best be upon his good behaviour. It is no good your rapping on the floor, or pulling the bell, when there is one; it is far better for you to go to the good people, wherever they may be, in the kitchen or in the store-room, and ask them politely for what you want.

But it must not be supposed for a moment that they are churlish or ill-natured—quite the reverse. They are always

trying to please you, and sometimes, indeed, their kindness becomes embarrassing. They bring you your coffee and flad-bröd to the bedside, and come and go through your sleeping apartment without the slightest hesitation. There are seldom locks on the doors, but if there are it makes no difference, for the worthy people knock away at the panel and wait outside until admitted.

Although it is so far north, Norway is not cold. Our first day's walk to a hamlet called Lien was one of the hottest tramps we remember. Fortunately, the path lies through groves of monster firs, their stems rugged with mossy lichen. The air is pure and crisp to a degree, and, despite the warmth, the walk is most exhilarating. We should have done better, so we hear afterwards, to have stayed for the night at Musted, but, like all pedestrians on a first day's tramp, we are anxious to get well on the way. So, only stopping once on our journey to secure a reminiscence of Ransfjord, a sweet scene of wood and water, we decide on a few miles more, and halt at the station at Lien. We here give an outline sketch from a photograph we took of



"Station" or Inn, at Lien. *W. F. J.*  
(from photo) Norway.

the homely hostelry; built exclusively of wood, and with a portico supported by pillars that seem to have come out of a

toy-box, the house looked as if it had been piled up from a child's box of bricks.

We only wish, by the way, we had made it a practice, in our wanderings as a tourist-photographer, to take a picture of every quaint inn at which we have tarried. One's pleasantest reminiscences of a tour are sometimes connected with the halting-places on the road, and, supposing the traveller is not passing through a land of modern hotels, his photographic sketches, in the end, of this kind, would be full of interest, and probably of some value from an artistic stand-point. We do not wish to point out our little inn at Lien as an artistic pile, but it is certainly a primitive one, and we doubt if a more simple house-of-call is to be found now-a-days except among the log-huts of the bush.

Our way lies through the Etnadal to Gravdalen. A photograph we secured of the valley of Etnadal, and another of a tearing white torrent in the midst of black pines in Gravdalen—taken on collodio-bromide plates—turn out particularly sharp and clear on development when we reach home, so that we have no difficulty in securing tolerable enlargements of them to the extent of five diameters. We suspect the purity of the Norway atmosphere has something to do with the clear detail in the distance shown in the negatives, for although in many respects the plates leave much to be desired, this feature is decidedly a prominent one.

We need scarcely point out that once fairly started in Norway, the tourist photographer has only himself to rely on in respect to chemicals or apparatus. It is quite impossible for him to purchase even the most conventional of chemicals, supposing he wishes to develop a plate *en route*, or perform other simple operation. In the same way, if his apparatus requires to be augmented or modified, he must do it himself. Fortunately, in our case, there was a party of four, for besides the photographer's kit, other necessities required to be carried. The weight of camera, dark slides, and stock of plates amounted to less than six pounds, and for tripod, three mountain staves of the party were fitted together. This remarkably solid tripod did other duty besides supporting the camera. A hook underneath permitted the attaching of a wire, whereon could be hung a *pot-au-feu* for cooking purposes (made, by the way, out of a



stout biscuit-tin), for, truth to tell, living in Norway is generally of a most frugal kind. During a ramble of three weeks, our party only tasted fresh meat once (some reindeer steaks at Nysteuen on the Fille Fjeld), and if tinned provisions are obtainable at a station, you may consider yourself decidedly fortunate. For this reason a supply of extract of meat, groats, condiments, &c., for the cooking of soup by the way-side, wherewith to make bread or biscuit palatable, is very requisite for a tour in Norway if you mean to rough it. The staple food, indeed, may be said to be fladbröd and butter, or smøer, as it is called. This fladbröd, with which travellers in Norway soon become on intimate terms, is an exceedingly thin rye or oat cake, prepared in disks some two or three feet in diameter, and so papery in consistence as to be capable of being folded into sheets like cardboard. It keeps good for weeks and months; to the taste it is not unpleasant, but the the annoying part of the matter is that, if at all hungry, you become tired of eating long before the cravings of appetite are satisfied. Quire after quire may be consumed of this edible stationery, until the lips are parched and the jaws weary, and yet one's hunger is unappeased.

There is a succession of charming lake scenery all the way to the Fille Fjeld; at Gravdalen it is a silent mere encircled by tall sombre pines; at Freydenlund a smiling blue lakelet, with islands of tufted foliage and undulating green hills, dotted here and there with white farm buildings. A big cloud above puts Freydenlund lake half in shadow, half in shine, as we photograph it, but we lack, unfortunately, the ability of an England or Bedford to make the most of our chance.

It is uphill all the way to the Fille Fjeld, and snow on the neighbouring mountains and a keener atmosphere tell us how rapidly we are ascending. The hills grow bare, foliage ceases, and only scrub and moss are met with. At Nysteuen the scenery is that of one of the high passes in the Alps, and in the photograph we secure from the station, snow is shown on every side, and it even covers the inhospitable shores of the lake that is here to be found on the summit of the ridge.

We have now crossed the highest portion of the Fille Fjeld on our way to the west coast of Norway. Snow and ice is no longer seen by the wayside, but the scenery is still very wild and grand. You must not be deceived by well-sounding names.

or well-marked localities on the map. We travelled by Wali-gorski's, and we cannot recommend it; for paths are marked of which we found no sign, and empty huts only were discovered where dwellings were supposed to exist; thus Kogstadt, notwithstanding its town-like name, consists of but three log huts. We take a photograph of the little plank erections, standing high upon a dark rocky eminence, with a big mountain side flecked with snow for a background; and Halne, which we reach later on, being marked by a little circle on the map, is but a wooden shed, six feet square and about four feet high.

But we are still on the highway as yet, where good "stations" abound. At Bergund we secure a picture—a very bad one,



it turns out, unfortunately—of a famous old church that is reported to have stood here for many centuries past. Built of oak, its beams are as black as ebony, and, although we knew of its whereabouts, its tint harmonized so thoroughly with the

sombre landscape, that there was some difficulty in finding it. We give a sketch taken from our photograph of this quaint edifice, whose outline is well known to archæological students.

At Leirdalsoeren we reach the Sogne Fjord, and here a steamer may be taken to visit the wonderful coast, and to reach Bergen if necessary. The scenery on the Sogne Fjord goes beyond the magnificent—it is appalling. Mighty rocks tower up like giant walls out of the green water, appearing, as one looks up at them from the little steamer below, to reach right into the heavens. Your boat is dwarfed to insignificance as it creeps along the narrow channels under shadow of these mighty cliffs, that assume the most fantastic shapes as they rise skywards. You understand now why people come all this way to get a peep at the fjords, for nowhere else are there such rocky chasms, such wild defiles, such bright green waters to be seen. Now you sail into a dark inland lake surrounded, apparently, by nature's stern walls; now you pass the opening of a smiling valley, all green fields and verdant pasturage; now you approach a gigantic cascade that comes tumbling out of a black cleft in the rocks, the white foam rippling the placid water as it falls.

We do not go to Bergen, but land at Gudvangen. Before bidding adieu to the Sogne we take a photograph of our landing-place, where the cliffs rise higher than ever at the water's edge. Then we pursue our way through the sweet green valley of the Naerodal to visit another not less famous fjord—the Hardanger-Vossevangen is the only good "station" between the two fjords, those at Vinge and Twinge being mere squalid hovels at which only milk and fladbröd are obtainable; but at Vossevangen there is good brown bread to be had, and tinned meat. We attended service here, and the marvellous costumes of the peasants, gathered from many quarters, are most picturesque. The clergyman, a grave Lutheran priest in a long black robe and white frill, is himself a relic of the past; of his congregation, the men wear, for the most part, knee breeches, bright green vests, and red night-caps; while the women have the shortest of skirts and whitest of stockings. In some cases the women's dresses had waists coming right up to the armpits, like those worn in this country at the beginning of the century; others had gaily-stitched corsets, meeting high up the neck, with smart embroidered aprons, and white head-dresses, and



full white sleeves. Blue eyes and straight flaxen hair are everywhere to be seen, and certainly Scandinavian features are more like our own than are those of any foreign people.

In fact, you soon get "at home" with the simple Norwegians. To pledge a glass of beer to "Gamle Norge" will make their friendship at once, for as we say Old England, so they say Old Norway. When they are especially pleased, they shake you by the hand or pat you gently on the arm. Shaking hands, indeed, is a universal sign of gratitude. If you give your carriage boy a few skillings, he at once shakes hands, or if you hold out a bit of fladbrød to a beggar, he employs the same token of friendship.

There is, however, one drawback the tourist photographer experiences in Norway, at any rate in the summer time; that is, the absence of darkness in which to change his plates in safety. It was very strange the first time we became aware of this. We waited patiently hour after hour on our arrival at Christiania for the light to fade. We sat chatting together, talking over our plans, but still the daylight lingered; presently, looking at the time, we found it was one in the morning. Then the truth came very strongly upon us, and we at once saw that our old plan of leisurely changing plates under cover of the night could no longer be practised. It was no easy matter to get a cupboard that did not admit light, and on several occasions it was necessary to drape a bed all round with thick hangings and get underneath, to pack and unpack in safety.

Eide, on the Hardanger, is a convenient spot to take boat to visit the Fjord and the mammoth waterfall, the Voring Foss that is near at hand. The steamer calls but rarely, but a row-boat may be hired, with three or four men, for a reasonable sum. The shores of the Hardanger are less rugged than the Sogne, but not less attractive on that account; in truth, there are few things pleasanter than being propelled along over the sea-green waters of these glorious fjords, watching the fine panorama of mountain and lake glide past you. Now a flock of wild geese fly straight over your head in two lines, forming an acute angle; now something splashes into the fjord from a low rock just ahead of the boat, and the men turn quickly to see if they can catch a glimpse of the seal that has dived into

the translucent water; now you start some screeching wild fowl as the boat sharply rounds a headland.

Presently the boatmen begin to sing. What is that well-known part song they are trolling? Listen; how familiar it is! They all join in chorus, and so could we, if we only remembered the name of the song. Hurrah! we have it:

"The hardy Norseman's home of yore  
Was by the stormy sea."

The boatmen are delighted at their passengers joining chorus; they check their oars for a moment and wave their hands. "Gamle Norge," our party shout in return, and then we all laugh and shake hands. Presently the boatmen start another song; this is also familiar, and we join once more:

"O, who will o'er the downs so free—  
O, who will with me ride?"

And so the time passes pleasantly upon the Hardanger Fjord; you row on and on through the live-long day, and it is only when you arrive at Vik, at the head of the loch, and find the people at the little inn are fast asleep in bed and want rousing up, that you begin to realise it is two o'clock in the morning.

The Vöring Foss, called the lion of Norway, is a good walk from Vik—beware of the charges here, by-the-bye, for they incline to be extortionate—and the way is so steep at times that it is difficult work even for a horse; there is no such thing as a carriage to be secured. The best way, therefore, is to foot it, and so our party mean to make way across the Scandinavians, by the Hallingdal Valley, and the borders of Tellemarken, to the lower Christiania road. We fill up with provisions before starting. And we may at once say that although our maps showed a path all the way, we found it in the end a trackless waste, over the wildest country, and a distance at the least of ninety miles.

A short walk to the Saebo lake, over which you are ferried, and then up a very wall of a mountain, that leads you, like Jack's beanstalk, into another world, apparently, a vast table-land. You follow to where a cloud of mist and spray hangs over the plain, to be observed miles away. The fall, or Voss, itself, is not seen until you approach close to the fissure or chasm in

the rock, in which the torrent foams and chafes in its headlong career. A fierce tearing rapid, broken up into hissing foam, dashes over a yawning abyss with desperate force, and, falling into space, disappears out of sight in a halo of spray and vapour. What becomes of the torrent after its terrific leap, you know not; but the deafening thunder of the water below, and the cloud of mist that rises to the brim of the awful cauldron, conveys to the shuddering senses some idea of the strife below.

Of course we get out our camera. The stand cannot be used from this point, for in order to see as much as possible of the fall—the Voss can be viewed at full length lower down, but it is then further from the spectator—you must approach the precipice on your stomach and crane your head. To secure a proper focus, we regard the opposite shore, for we cannot put our head where we mean to put the camera; as it is, our position is a dizzy one, the stormy blast of the fall, the terrible thunder, and the wet foam rising from the vast abyss, all combining to attack the senses. A sudden gust comes that bids fair to blow camera and lens into the foaming water; we seize it as we lay there at full length, but at the cost of our wide-awake, which goes flying over the black precipice, never more to be seen by mortals.

We do not advise any of our readers to follow in our footsteps further across the Hardanger Fjeld unless provided with a good guide, and perhaps a pack-horse, with food and camping equipage. We travelled by map and compass only; within a few miles of the Vöring Foss, the map left us in the lurch, or rather our track did, while the glaciers, fierce mountain streams, and broad waters, prevented one from travelling in anything like a straight line. In these circumstances it took us three days' hard walking to reach the nearest hamlet—Tufto—at the head of the Hallingdal Valley. After you have passed Maursaet, there are only half-a-dozen little wooden huts between you and civilisation; these are so much the colour of the big grey boulders strewn in all directions that they are difficult to find, and when found they are sometimes without inhabitants. A good-natured farmer whom we providentially met the first day (the only individual we did meet on our three days' tramp), directed us to one of these huts, writing a line of recommendation on our note-



book : "These are Englishmen ; they are not vagabonds," a passport that was several times of value to us in the district.

But the scenery of the Hardanger Fjeld is well worth many hardships. One of the most charming natural effects in Norway is the midnight sunshine glowing upon the interminable wastes of snow and rugged grey peaks. In these districts, in mid-summer, the sun merely dips down out of sight for half-an-hour or so, and during this period you may observe the most lovely effects of sunset or sunrise, whichever it may be called, for the same phenomenon answers both purposes. To see the cold white landscape gradually become tinged with rose colour and purple as the lurid rays of the sun strike aslant the snowy regions is a sight that will never escape the traveller's memory. You watch from some eminence the gorgeous colours as they change and modify, the white snow-fields and distant glaciers now shining like burnished gold, now bathed in the violet haze of sundown. The orb of day has been lost to view for some time, but presently the colours, instead of growing fainter, become vivid again. It must be the moon, you think, that is coming up to take the place of the sun during its brief retirement from the scene. The tints brighten perceptibly, and the gilding upon the mountain-tops shines out as brilliantly as ever, as the luminary rises. But it is not the moon ; it is the fiery sun again that proclaims another day has come, and that the night is over before it has begun.

Fortunately the mountain air is so crisp and exhilarating that no such thing as fatigue comes over the traveller. Perhaps the excitement of travelling on one's own responsibility has also something to do with it ; but although the second night is passed in a lonely hut, with but little food and a half-hearted fire—for the juniper bushes afford the only fuel to be got—our party keeps up its energy and spirits. In front stretches an endless moorland covered here and there with broad fields of white, the higher valleys filled with congealed snow or glacier. To the north is seen the mountain peaks of the Fille Fjeld and Northern Scandinavians, some of them grey and craggy, others with snowy hoods and closely-drawn mantles of white, with broad glaciers streaming down their sides like white lava.

It is only when at last your journey is done, and you see the smiling fir-clad Hallingdal Valley at your feet, and behold the white farmhouses at Tufto, that fatigue creeps over your frame. There is no "station" at Tufto, but, fortunately, hospitality is

a marked feature of the Norwegians. Rest and food we are welcome to, and ten miles further on—a weary trudge—Sundre is reached, which is a “station,” if only a slow one. The lower Christiania road is now not far off, and this being reached, we face for home.

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### No. V.—THE PYRENEES.

THERE are two reasons why the tourist and the tourist-photographer are rarely found in the Pyrenees. The district is somewhat more distant than other playgrounds of Europe, and there is a wide-spread belief—certainly founded on fact—that the Pyrenean spas and spots of interest on the confines of France and Spain are expensive places. We are not going to deny this, but, despite the remoteness of the country and its costliness, we may state at the outset that we ourselves spent a month in the district, travelling, indeed, as far as Vittoria, to get a peep at Spain into the bargain, at a total sum of less than twenty pounds. That the journey cost us some fatigue as well—for third-class trains are very slow, both in France and in Spain—we readily admit; but, then, who would not undergo some little hardship to see the mighty forest-clad ranges, the snowy Vignemale and Maladetta, let alone the picturesque natives in their “berret” caps, broad red sashes, and white stockings, and the coquettish black-eyed maidens to be found on the borders of Don Quixote’s country?

The way lies through Paris and Bordeaux, and at the latter town you may purchase a railway ticket, that makes the tour of much of the Pyrenean district, at seventy-five francs first class, and fifty second class; but this ticket, naturally, only takes you into central spots, and, to get among the mountains, you must rely upon your legs, or hire a trap. The roads of the Pyrenees, we may here state, are very perfect of their kind—smooth and well kept; they pass through the most charming scenery of cliff and woodland, at times constituting a terrace-like promenade in face of a delightful out-look. Our journey was made on foot, with the knapsack, and so little is this mode of travelling understood, that, as often as not, you are taken for a pedlar. On one occasion, in the Val d’Ossau, we had

thrown off the pack in front of a little auberge, the better to enjoy some red wine we had ordered. The landlady, after watching for some time, and mistaking our leisure for a hesitation to exhibit what we had in the knapsack, called out, by way of encouragement, "Eh, bien; qu'est que vous avez à vendre?"

One of the best starting points to visit the Pyrenees is Pau, journeying thence by diligence to Oléron at the foot of the valley of the Aspe, or Val d'Asaspe, as it is sometimes called. Oléron is a quaint town, where the camera may at once be brought into requisition, for it is one of those old-fashioned remote places where progress does not travel so fast as in big cities. Oléron, in fact, is a very good example of a Pyrenean town, and its streets and public buildings will make many an interesting picture. You may get into Spain by following the sequestered valley to its head, but the international traffic is not enough to wake up sleepy Oléron; indeed, the road terminates at Urdos, and afterwards it is only a craggy ill-kept mule path that leads over the border. A few miles beyond Oléron all traces of town-life vanish, and soon after the village of Asaspe is passed, the lavish beauties of the valley become apparent. On both sides of the way are dense hedges of box, and upon the slopes on either side, which become more precipitous as we advance, are green fields in which the hay-makers are busy at work. It is not, however, till we cross the Gave, or stream, at the Pont d'Escot, that the most romantic part is reached, the mountains suddenly closing in upon you. In some places there is scarcely space for the road and the bright green torrent that runs beside it, so narrow is the defile; and the eye rests enchanted with the picturesque gorge that stretches many miles in front. The steep hill-sides present one vast expanse of soft green verdure, of various shades and tints, lawn-like meadows and cultivated fields being separated by hedges of leafy foliage. Not a barren spot, or a grey rock or boulder, is visible on the mountain side to mar the soft and peaceful aspect of the scene, which might be called with truth the Emerald Valley.

Presently the defile widens again, and we reach the busy little village of Sarance, the violet bloom of sunset making the cottages bright and splendrous with colour. It is a pretty



sight of an evening to see the peasants hereabouts fetching water from a neighbouring rivulet, and carrying it away on their heads in tall wooden vessels, broader at the bottom somewhat than at the top, to allow of their being easily balanced. In most places it falls to the lot of the women to perform the office of water-carrier, but here it is the men of the household who do the duty. They set down their vessels, so white and clean as to be a marvel of scrubbing, at a spot where the little stream runs bright and clear over the pebbles, and proceed to bale the water into their tubs by means of bright copper ladles. The ladles are polished and rubbed till they shine like burnished gold, and the pure cold water is altogether treated with the most laudable care, to prevent contamination. At first we are under the impression that a party of water-carrying peasants, whom we meet, are on their way from the dairy with the milk-white utensils deftly poised upon their heads, and accordingly stop one of the men to beg a drink; and great is our disappointment to be offered, instead of a sup of new milk, nothing but cold water, although we cannot resist the temptation of taking a sip from the golden ladle held out by the friendly hand.

The Pyrenees has not been photographed, like other mountainous districts, and even in the collection we have seen, no picture of the beautiful Val d'Aspe is included. The Pont d'Escot is one of the best points the photographer can select for a picture, and a second view may be secured above Sarance. Bédous, the next village, is rather dirty, and situated in the sole of the valley, where this is not so picturesque. But Bédous is a convenient halting place for the night, whence the rival valley, the Val d'Ossau, can be reached. It is a five hours' walk to reach the top of the col that separates the valleys, and the spa of the Eaux Chaudes is two hours farther. Crossing the grassy peak, a charming glimpse of snow and forest scenery is before you, while on your lofty path, when other vegetation has ceased, may be gathered the red Alp rose, London pride, and the bright blue shepherd's looking-glass. The solitary Spanish shepherd and his dog we meet upon these lonely highlands deserve a few words to themselves, and a photographer now-a-days, provided with gelatine plates, should not miss the chance of securing a photograph of the original

aspect they present. There will be plenty of opportunities, for the type is to be met with throughout the Pyrenees. His swarthy figure seems covered with a sole garment, a big brown blanket with openings for the arms, quite a classic toga; and instead of crook, he carries a long pole, at the end of which is a small spade or trowel, wherewith to dig up a bit of turf or earth to throw at an erring sheep. He precedes his flock, which is followed by a white dog, something like a Newfoundland, but of more formidable proportions.

Eaux Chaudes—it takes its name from the warm springs here—makes a capital picture. It is not a village or even a hamlet, but a narrow defile or cleft in the rock in which a few houses are apparently firmly wedged. The mountain walls of the valley rise precipitately to a couple of thousand feet, and are not a hundred and fifty yards apart. The only difficulty in taking a photograph is how to display the full height of these cliffs; as a matter of course, the lens must be raised above the centre of the camera, and if there is a swing-back, this must be adjusted with care.

Eaux Chaudes is a capital head-quarters for the tourist who wants to visit the wild scenery and magnificent torrents at the head of the valley, and a two days' excursion will take you to the primitive baths of Penticosa, situated up at the snow line in Spanish territory.

Eaux Bonnes, another spa, is close to Eaux Chaudes. This is a very fashionable place, and is filled with the *élite* of Paris in the season. There are fine gardens and pleasant promenades, together with easy mountain excursions in the neighbourhood. In fact, here you play at being in Switzerland; the Parisian is not much of a mountaineer, but he likes to have his guide and his climbing suit, as if he were engaged on real hard work.

The guides, too, are a pretence. They know little of the district, and nothing of glaciers and crevasses. But as to costume and appearance they are perfect. Attired as if for the performance of an opera comique, with gorgeous red jackets and spotless white stockings, they invite visitors to avail themselves of their services in the most gentlemanly manner. Unfortunately, they are only men of promise so far as their qualifications are concerned, and are not fitted for honest labour, any more than the theatrical costumes in which they

are clad. One may safely trust oneself therefore in their hands, for they rarely venture off the beaten track, and if they do, and lose their way, they are very frank about the matter.

"I beg pardon, sir, but do you happen to know where we are?" one of these guides is reported to have said to his employer.

"That I certainly do not; I was never here before!"

"Nor I either!" was the guide's unhesitating reply.

Frenchmen, as a rule, prefer to make their "ascents" on horseback rather than on foot; and the guides we have mentioned are in reality horse-jobbers, rather than, as they are wont to describe themselves on their cards and over their dwellings, "Guide de 1<sup>re</sup> classe," "Chasseur des Izzards et des Ours," &c.

Another day's walk takes you to the valley of Argeliez, over a steep col, whence a most charming view, as you begin to descend, is secured of the valley and village below you. It is the Val d'Arun you are looking at, and the tiny church and cluster of white cottages at your feet is the village of Arruns. If you can get a good photograph of this, you will have secured one of the most smiling features of the Pyrenees.

You may fancy you have gone back a couple of centuries as you lie lazily upon the grassy slope in the warm sun, and, half dozing the while, watch the objects passing along the road above you. Here come a couple of Spaniards with sunburnt faces and ragged beards, dressed in red berrets and sashes, white-stockinged, and cross-gartered. Each carries a thing like a leg of mutton suspended from his shoulders, which turns out, as they come nearer, to be a skin of wine. The shaggy, picturesque characters come to a standstill, as a matter of course, on seeing travellers, and, in return for a coin or two, pour out some of the liquor into a travelling-cup, the red wine flowing out in a thin stream as soon as a wooden peg has been removed. Then labourers with agricultural tools of the most primitive kind pass by on their way to the village, and following them comes a cart drawn by oxen, such a one as our Anglo-Saxon ancestors might have used. It is a low wooden frame supported on wheels, which are simply wooden discs a foot in diameter, and altogether of the rudest aspect.

There is good accommodation at Argeliez, and here we stop the night before proceeding on our way to Luz and Gavarni.

Quitting the emerald vale of Azun, at the mouth of which



Argeliez stands—a sylvan Paradise where the luxuriant foliage of Spanish chestnut trees, the grass-green leaves of the walnut, and the freshness of the verdure are “beyond compare,” and all in lovely contrast to the frosted peaks and snow slopes that bar the end of the vale—we pass on to Pierrefitte. This little village—three miles from Argeliez—is at the foot of the gorge of Pierrefitte, a magnificent mountain defile. The photographer will find plenty to do here, if he loves wild and rocky pictures. Grey cliffs rise precipitately several hundreds of feet above the torrent, which is little else but foam. On the wayside, too, are mighty boulders—picturesque masses of rock—which, if lighted from behind, make a magnificent feature in a landscape picture with their heavy shadows. The path is very steep, for our destination, Cauterets, is upwards of three thousand feet above the sea, but well within a day’s walk from Argeliez.

Cauterets itself has little to attract, being rather cold and desolate; it is, however, a fashionable spa, its nasty lukewarm springs being considered very efficacious in disease. In the neighbourhood is the peerless Lac de Gaube, situated at the foot of the snowy Vignemale, and as the way thither leads by some magnificent cascades—masses of white foam tumbling out of mighty chasms in the depths of a black pine wood—the excursion is one which must be undertaken by every able-bodied visitor. You pass on your way the “Pont d’Espagne”—a few pine planks thrown over the torrent, and scarcely enough to make a picture in the camera—reaching the tiny mountain lake in about three hours from Cauterets. Of a greenish hue, its clear, still waters reflect upon their surface the towering Vignemale, whose sparking glaciers rise from the further shore of the lake. We have never seen any photograph that has done justice to the Lac de Gaube; the pictures are too cold and hard, and have none of the warmth of sunlight about them, a quality very necessary to the full appreciation of the scene.

You may get over the snows of the Vignemale to Luz, but we prefer retracing our steps to Pierrefitte, which is a convenient spot to leave one’s heavy baggage. Luz is quite a romantic spot. Of the two old castles you certainly must get a picture, for these were invested by Edward the Black Prince during the prolonged wars in the reigns of the Edwards. The old church will also attract the photographer’s attention, and he should include in his picture the little doorway, now bricked up, by

which the crétins or cagots used to enter the divine edifice. Like the lepers of old, they were forbidden to mix with their fellow-creatures, and were permitted only to marry among themselves. At the present day, fortunately, whether these poor creatures are more properly cared for in hospitals, or whether the disease is gradually dying out before the progress of civilization, it is very rare indeed to meet with afflicted in the villages and hamlets, and, unlike in Switzerland and Savoy, cases of goitre or idiocy are rarely to be seen.

Opposite Luz, on the slope of a smoothly-turfed hill, and consisting of a street of tall white houses, stands St. Sauveur, one of the favourite and most cheerful spas of the Pyrenees. The prettiest view is obtained from the hill at the foot of the Pic de Bergons, whence the bright little place is seen, partly hidden among leafy foliage, its church of fine white stone being the most conspicuous object. An elegant iron bridge, spanning an abyss of upwards of two hundred feet, connects the spa with the valley of Gavarni.

The lawn-like meadows, the fresh green foliage, the golden buttercups, the dog-roses in the hedges, the stone church with its tapering steeple, the odour of new-mown hay, the cool atmosphere, all remind one somehow of Old England; while some of the thatched farm-houses about, with their straw-littered folds, help materially to heighten the illusion.

All this smiling country is soon left behind, and then you begin to climb the steep road to Barèges. Barèges has a familiar sound to us, because of the fabric of that name which is made, not in the mountain town itself, but in the district. Barèges itself is reputed for its healing waters, which are said to cure old wounds; but it is such a woe-begone spot, and the way there is so difficult and steep—the road making its way through a bleak wilderness of stones and rocks—that, as M. Taine once remarked, an invalid must have lots of strength if he is to be cured.

From Barèges by the Tourmalet Pass to Bagnères de Bigorre is a day's walk, the photographer securing a picture of the Lac Bleu and the grand waterfalls at Grip on his way. Thence we cross the Hourquette d'Aspin—the farm buildings hereabouts also make you think you are back again in England, they are so much like our Kentish homesteads—and reach Arreau, in the Val d'Aure. The outlook from the Hourquette d'Aspin is one



of the finest and most extensive in the Pyrenees. In front, stretching from east to west, is a continuous chain of verdure-clad mountains, behind which rise others more lofty—some of a pure white, some merely tipped with snow, and others grey and craggy. The monarch of the Pyrenees, and highest mountain in Spain, the famous Maladetta, may be seen; and far beyond, at the blue line of the horizon, are the broad plains of Arragon. Down in the valley at our feet are tiny villages, with fields and streamlets on the same microscopic scale, the miniature town just under us—so near, apparently, as to be within stone's-throw—being Arreau, which is, however, still a dozen kilometres distant. A more beautiful picture can scarcely be imagined, combining, as it does, the snowy scenery of the Alps with the luxuriant vegetation of a southern climate.

Quarters are to be found at Arreau, and then we march along the sequestered Val d'Aure. At Cadéac, the first village, is a capital subject for the camera. It is an old church of the most original construction, and if you take your picture from the roadway, you show at once its chief features. For the church is literally built upon the highway; the road runs right through the building, the altar and pulpit being on one side of the thoroughfare, and rows of stone seats arranged in tiers on the other. A cart driven along the road during service would therefore find itself all at once in the middle of a devout congregation, driving up the aisle, or rather across the central pathway in front of the altar. Farmers coming to mass on a Sunday might remain in their vehicles during service, and have no need to dismount and to put up their horses at a neighbouring hostelry.

It is only the pedestrian who can penetrate this lovely valley beyond the picturesque village of Tramesaigues, for here the roadway ceases, and there is no outlet except that over the Col de Cambiel into Gédre. This col, although not nine thousand feet in height, is an arduous climb, as the snow usually is very deep; but it may be attempted by any good walker accompanied by a guide from Arragnouet. It is a comb between two mighty peaks, and a couple of hours' tramp through soft snow is generally necessary to reach the summit, whence it is easy to reach Gédre in the Gavarni valley.

From Gédre, where the accommodation is good, although rather simple, we proceed to Gavarni and the Cirque, one of the



most wonderful spots in the whole of the Pyrénées. The famous French artist, Gavarni, took his name—for it was only a *nom de plume*, or rather *de crayon*—from this spot, where he lived many years. It is but a four mile walk to the village; but the Cirque is twice as far, so that it is well to sleep a night at Gavarni, where the inn, if not first-class, is very tolerable. The photographer must not fail to secure a photograph or two on the road, for there are pictures at every turn. Imagine the green sward of the valley as trim as a gentleman's lawn, with graceful silver birch trees here and there, and a background of dazzling snow. The smooth road runs through this sunny Eden, but not in a straight line, for big masses of black rock, that have become detached from the bare mountain walls on either side, and have rolled headlong into the valley, lie about in glorious confusion. In and out among these mighty obstacles your way leads to the valley, sometimes broad and spacious, and sometimes only a narrow rocky defile scarcely allowing room for the road and the torrent that runs beside it.

The Cirque of Gavarni is a mighty amphitheatre of rock and glacier, bringing the valley to a sudden end; it would be called a Corrie in Skye. A waterfall, said to be the highest in Europe, falls over the face of the cliff; but it is generally only a thread of water. The Cirque is a difficult subject to photograph; all the pictures we have seen give no idea of its height and grandeur. They look like the representation of a big marble quarry more than anything else. So here is a problem for the tourist photographer which he may set about solving.

A steep climb from Gavarni will bring the hardy pedestrian to the snow-fields above the Cirque, and if he is a mountaineer, he may reach the Brèche de Roland, whence a path leads into Spain. But this is a difficult tour. For most tourists it is best to turn back to Gédre, and then visit the lower part of the Gavarni Valley between that village and Luz.

